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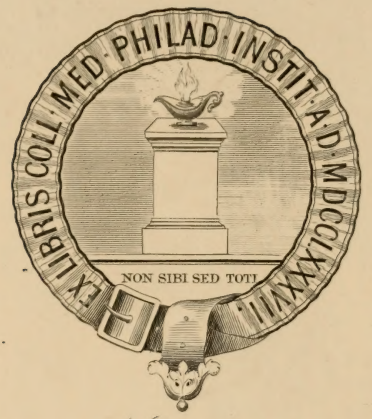
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COLLEGE OF PHYSICIANS OF PHILADELPHIA

THE

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Medicine, Surgery and Collateral Sciences.

EDITORS:

J. ADAMS ALLEN, M.D., LL.D.
WALTER HAY, M.D.

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Original Communications.

ARTICLE I.—*Clinical Lectures on Diseases of the Ear.* By E. L. HOLMES, M.D., Chicago.

THE MIDDLE EAR AND ITS DISEASES.

Gentlemen:

It will not be unprofitable to review briefly the remarks I have made from time to time, as patients with diseases of the tympanum have come to the clinic for treatment; for these diseases are very common, and should engage your serious attention.

You have studied the principal affections of the external meatus. Diseases of the labyrinth, which are relatively quite rare, and unfortunately seldom curable, have also fallen under your observation.

What you have already investigated at this clinic, is sufficient, I think, to correct the opinion which you may have had, and which I think is generally held by practitioners, that the classification of aural diseases is very arbitrary and unsatisfactory. You must now admit, I trust, that the classification is strictly founded on an anatomical, physiological basis, and easily comprehended by any one acquainted with the anatomy of the ear.

The middle ear, or tympanum, is an extremely irregular cavity—a continuation, as it were, of the external meatus, surrounded on almost every side by bone. Its average length is about six and a half lines; its height varies in different portions from three and a half to seven and a half lines. The distance from the membrana tympani to the bony wall opposite to it, varies from one to two lines.

The external lateral wall is the membrana tympani—the internal lateral wall is the bony covering of the labyrinth. The roof of this cavity, over which lies the brain, is a thin septum of bone, through which are several minute openings for the passage of vessels.

The floor of the tympanum is also in some portions a thin septum separating it from the jugular vein. This septum, as also the roof, is sometimes in places destitute of bone, as if ossification had been incomplete.

The posterior wall separates the tympanum from the mastoid cells. In the upper part of this wall is the passage to these cells.

The upper portion of the anterior wall contains the mouth of the Eustachian tube.

The inner lateral wall is an important portion of the tympanum. In it are situated posteriorly the foramina ovale and rotundum—the former opening into the vestibule, the latter opening into the cochlea. Anterior to these, and nearly opposite the centre of the membrana tympani, is the promontory—an elevation produced by one of the coils of the cochlea. In front of this promontory is the portion of the wall covering the carotid artery.

There are two exceedingly minute muscles in the middle ear—one attached to the stapes, and called the stapedius; the other attached to the handle of the malleus, called the tensor membranæ tympani.

These muscles are believed to control, to a certain extent, the tension of the membrana tympani, and to modify the degree with which the stapes presses upon the fluid of the labyrinth.

Never forget the character of the tissues surrounding this small cavity. Calling to mind the patients who have come here with long-continued purulent discharge from the ears, and with destruction of the membrana tympani, you must have often asked yourselves how such severe disease, so very near vital organs,

could continue so long and violent without fatal results. It is well known that purulent discharge from the ear may result in death. For this reason you should never permit a case with obscure cerebral symptoms to be under your care without a careful examination of the ears. This should be impressed on your minds the more earnestly, because you will be in danger of overlooking it; for in proportion to the number of cases of otorrhœa, we must confess that fatal cases are quite rare.

To comprehend why diseases of the middle ear so often impair hearing, you need but recur to the delicate mechanism of the minute chain of bones extending across the middle ear, and of the membrane of the foramen rotundum.

Remember that these structures, so wonderfully connected, are made to vibrate by the waves of sound—that by them the fluid in the labyrinth is set in motion, which is communicated to the microscopic fibres of the auditory nerve, producing the sensation we call sound.

In the ear, as in all other organs, inflammation is the most frequent source of injury. If the products of inflammation, mucus or pus, collect in the middle ear; if the mucous membrane covering the membrana tympani, the membrane of the foramen rotundum or the ossicles, becomes œdematous, or indurated, as the result of inflammation, this apparatus can no longer vibrate so sensitively as in the normal condition.

Even when the quantity of air in the middle ear is diminished by obstruction of the Eustachian tube, the vibratory motion of the membrana tympani is impeded by the external atmosphere crowding unduly upon it. Hence, as you are aware, the manner in which disease of the tympanum, in its various forms, impairs hearing, is almost invariably by impairing motion of the mechanism above described.

The simplest classification of the diseases of the middle ear is perhaps the following: Acute—chronic catarrh; Acute—chronic purulent otitis; which we will consider at another time.

ARTICLE II.—LECTURE 3D—*Neuralgia.* By WALTER HAY, M.D., Assistant to Chair of Practical Medicine, and Lecturer on Diseases of Brain and Nervous System, Rush Medical College.

(Continued.)

GENTLEMEN: In my last lecture I gave you the outlines of the various forms and phases of peripheral neuralgia. I will now describe to you some of the most important forms of visceral neuralgia. Of these, that which you will most frequently meet in the course of your practice, has its location in the uterus and ovaries; indeed I may say, that these largely preponderate numerically over all other forms of this class.

This is undoubtedly due to the frequent and extreme changes which the nervous apparatus of these organs must sustain, in their passage from the highest state of physiological activity to that of complete quiescence; to the extent and complexity of this nervous mechanism; to the intimate correlation of the sexual apparatus with, not only the bodily, but with the mental functions as well; and to the remarkable susceptibility to disturbance in their functions and their anatomical condition with which these organs are endowed. Of uterine and ovarian neuralgias, one of the most common forms is that which attends menstruation, and this more especially in young subjects. It is not to be confounded with what is commonly called dysmennorrhœa, or obstructed menstruation, although the pain in this case is sometimes truly neuralgic. It will often be found to continue after the escape of the menstrual blood has been effected, and often too, indeed most frequently, when this has been quite free from the beginning, when there has been no dysmennorrhœa; indeed, some of the worst cases are those which accompany an excessive menstrual flow—mennorrhagia. The neuralgic pain seems to be independent of the flow, and to be an expression of some intrinsic quality of instability or excessive irritability in the uterine nerves or their centres. Some of these cases are indentical, pathologically, with some of the forms of trigeminal neuralgia described in my last lecture, having for their ultimate factor vaso-motor paralysis, and consequent engorgement of the ovarian vessels, and pressure upon sensory nerve fibres.

Uterine and ovarian neuralgias, (I speak of them jointly, for they are practically almost inseparable, and indistinguishable,) are not always, however, the result of direct uterine irritability, but frequently are reflex in their character, and occasioned by sources of irritation more or less remote, such as the presence of ascarides in the rectum, calculus in the bladder or in the pelvis of the kidney, tumors in the uterus or its appendages, ulceration of the neck of the uterus. It is said to have been caused by a carious tooth.

I have recently had under my own care, a case of intense uterine neuralgia, which could be attributed to no probable origin, the organ and its appendages being, and having always been, in a perfectly healthy condition.

Neuralgia of the urethra is mentioned by some authors; it is very rare. Neuralgia of the rectum sometimes occurs. In the testicle it is not uncommon. I have a patient who is subject to occasional attacks.

Occurring in the kidney or the liver, as asserted by some writers, the diagnosis is difficult—I should think, indeed, impossible. The cases reported are rare, and may, I think, be assigned to inflammation or mechanical irritation of these organs respectively.

One of the most common, most severe, and most obstinate forms of visceral neuralgia, is that which affects the heart.

The identity of cardiac neuralgia and angina pectoris is disputed by many, and asserted by others, but it appears to me that the ground for the difference of opinion is rather relative than absolute; the idea of angina pectoris having been always associated with ossified, or rather with atheromatous coronary arteries, and with essential modifications of the nutrition of the organ, seems to be totally at variance with that of cardiac neuralgia, in which there is oftentimes no *apparent* structural disease. To those who would still endeavor to preserve the fanciful distinction between functional and structural diseases, the two conditions are apparently irreconcilable. But there are many cases of angina pectoris in which structural changes have progressed to a very slight extent, and there is no case of neuralgia in which structural changes have not progressed to a very slight extent. For I will here reiterate, what I have already endeavored to impress upon you, that any modification in the functional energy of a nerve, (or

of any other organ,) is necessarily preceded by change in its structural integrity.

I have just told you that many cases of angina pectoris were accompanied by no changes in the heart, recognizable by ordinary means of observation. In order to account for these changes, then, we are driven to assume a cause lying deep in the nervous system, most probably some change in the molecular organization of the nerves themselves.

The onset of cardiac neuralgia, like that of all other forms of the same disease, is sudden; the patient, without any warning, but usually after some active exertion, is seized with severe pain, resembling, in its severity and rapidity, a stab with a knife, described by most authorities as beginning at the lower part of the sternum, and extending through to the back and left shoulder, and down the left arm.

In some cases, however, and I have had frequent opportunities for observation, the pain begins, and is restricted to a small spot about an inch and a half below the nipple, corresponding to the point at which the cardiac impulse is felt against the wall of the chest. The stabbing sensation first experienced, is soon complicated with a feeling of compression, as if the heart were squeezed tightly or pinched. The countenance assumes an anxious expression, and is sometimes pale, sometimes livid; the pulse at times small and feeble, at others full and bounding, but always irregular, the prominent and constant symptom being irregularity of circulation. Under my own observation—and as I have already said, my opportunities for observing this disease have been frequent—the direct relation between the pain and the pulse has been strongly marked; the pulse stopping abruptly at the moment of the onset of the pain, during the time of one or two pulsations, and then beginning, but slowly and irregularly, recovering its rythm only after five or six beats. This relation has been so distinctly marked, that it has been easy to mark the onset and the subsidence of the pain by means of the finger applied to the pulse at the wrist, the patient's face remaining covered.

Authors describe this form of neuralgia as very rare before the age of forty. It sometimes occurs early in life; I have seen it as early as twenty-five.

In reference to the disputed identity of cardiac neuralgia, and the

angina pectoris of the older writers, it may be said, that those who attribute angina to structural modifications of the heart, seem to forget that nerve tissue is as much a part of the structure of that organ as muscle or connective tissue, or any other; and that it is quite as reasonable to assume that changes in nerve tissue, such as atrophy or neuritis, may occasion disease, as that changes in muscle or connective tissue could do so. And totally unreasonable to assert that either tissue could be seriously diseased without involving the other to some extent.

There remains but one form of visceral neuralgia of sufficient importance to be specially noticed here. This is gastralgia, or gastric neuralgia, or neuralgia of the stomach, having for its seat the afferent fibres of the gastric division of the pneumogastric nerve. In this, as in all other neuralgias, the collateral evidences of debility are present. Its victims are principally women; it is in the case of these not unfrequently a reflex phenomenon, originating in uterine or ovarian disease. It is generally marked by more or less mental depression, which, like the pain, is intermittent in its character. Notwithstanding the apparent severity of the gastric disorder, the appetite is rarely interfered with. There is a peculiar feature about this disease which I believe to be pathognomonic, that is, the relief obtained by pressure; this is so apparent to the patient that he may frequently be observed beating his left side with his fist, for it is upon the left or cardiac extremity of the stomach, that the pain is most frequently felt.

Pharyngeal and laryngeal neuralgias occur most frequently in females, and as complications of hysteria. Of the former I have seen but one idiopathic uncomplicated case.

The above summary comprehends all the more prominent forms of neuralgia, which you will be liable to meet; but before leaving this portion of the subject, I wish to call your attention specially to one characteristic of the disease in general, and that is, its almost universal hereditary transmissibility. A neuralgic diathesis is rarely found without a neuralgic ancestry, or at least an ancestry marked by decided nervous instability of some sort or another. In the one generation the perturbation may involve cerebration, and in the other sensation, the insane parent generating the neuralgic offspring. Or again, in the one generation, disturbances of motor function, either in the direction of excess or defect, may be sup-

plemented in the next by derangements of the sensory function, and in these cases we find the neuralgic offspring of epileptic or paralytic parentage. This fact of hereditary transmission underlies the whole history of nervous disease. It must not be supposed that this is restricted to the reproduction of specific forms of nervous disease, or that nervous diseases never develop in the descendants of perfectly healthy ancestry. These, like all other disturbances of health, must originate somewhere, and of course just as well in the present as in any past generation. What is transmitted from one generation to another is that peculiar instability, motility of nerve tissue, which diminishes its resistance, and renders it so liable to derangement, under the influence of determining causes which induce this or that special form of disease. Thus a patient endowed with a nervous system of this character, may under the operation of certain influences become epileptic; under others, neuralgic; under others, paralytic; under others, insane; and so on, through an immense variety of morbid conditions.

These facts, together with the numerous instances of nervous derangement arising co-incidently with neuralgia, and undoubtedly dependent on it as their exciting cause, justify us in arriving at conclusions regarding its true seat. As already referred to in my last lecture, changes in nutrition and in motor function accompanying many cases of neuralgia, indicate a remarkable uniformity in the condition of the different nerves ministering to the various functions, and which indicates that the pain of neuralgia is not necessarily dependent upon changes in the peripheral portions of the nerve, but possibly upon changes in the nervous centre itself.

If we suppose that an afferent nerve, in a state of disease, should transmit to its appropriate centre an impression, perverted by reason of its own diseased condition, the nerve-cells of the ganglion or nerve-centre, destined to receive impressions through that nerve, would not undergo their normal molecular changes, but some other, or perhaps none at all, by reason of their insusceptibility to any other than their normal impressions. But these nerve-cells in a healthy state, under the influence of their appropriate changes, induce reciprocal changes in other nerve-cells, motor or trophic, of the same nervous centre, by means of which the proper functional energy of their efferent nerve fibres is excited.

Thus, for example, if a hot body be applied to the hand or foot, the afferent or sensory nerve being in a healthy condition, transmits to the nervous centre the impression of heat. The reception of this impression necessitates a determinate and invariable change in the nerve-cells of the centre, which are designed to receive that particular impression; this change induces determinate and invariable changes in other cells of the same central ganglion, by means of which the functional energies of certain efferent nerves, (motor or trophic) are called into activity, and the appropriate changes in motion or nutrition are thus effected. The sensitive surface is withdrawn from contact with the burning body, and vesication, or some other tissue change, occurs at the surface of contact.

This embodies the whole theory of reflex action—for you observe that I excluded the influence of the will entirely.

But, on the other hand, if the afferent nerve be diseased, it cannot convey a normal impression to the centre, the appropriate cell-modifications cannot be accomplished, the motor and other energies will be excited in an abnormal manner or not at all.

Again, the negative result may occur in the case in which the afferent nerve is healthy, and entirely capable of conveying normal impressions; but the cells of the centre are unfitted by disease to sustain their appropriate changes.

Or, still further, the receptive cells in connection with the afferent nerve fibres being healthy, the motor or trophic cells associated with them in the same nervous centre, may be themselves unfitted by disease to receive and transmit their normal modifications. Either of these conditions may exist in neuralgia, and either would sufficiently account for the morbid phenomena which so frequently accompany it. But when the additional fact is stated, that in post-mortem examinations of the subject of idiopathic neuralgia, (of course those of traumatic origin are excluded,) the extremities of nerves have usually been found unchanged. From which it may be assumed that in many, if not in the majority of cases, the disease is due to the condition of the nerve centres themselves.

I have been, perhaps, a little tedious in making the above explanation; but (as I mentioned a moment since) it involves the whole theory of reflex action, and unless you thoroughly master

this most important form of nervous energy, you will attempt in vain to appreciate the intricate complications of nervous pathology.

This presents a striking illustration of the conversion of force, and of the truth of the proposition that force is never lost, only converted.

Among the reflex effects of neuralgias are various affections of the skin and its appendages, developed in the manner just described. Erysipelas is occasionally observed; changes in the color of the hair are frequent. It is rare to find a neuralgic subject whose hair has not become more or less gray, in the vicinity of the affected nerves. These decolorizing changes are sometimes produced with great rapidity, it being sometimes quite possible to observe a marked increase in the grayness of the hair after a severe attack of neuralgia. It is asserted by some authors, that these changes are sometimes temporary, that the color will return to the bleached hair, upon the cessation of the pain, to be again discharged upon its recurrence. I have not observed this personally, but it is quite plausible.

Permanent changes in the nutrition of the skin have been noticed by some authorities, by which the integument assumes a glazed, shining appearance. This will be found, I think, to accompany neuralgic cases of traumatic origin, and it may be concluded, that they result rather from direct mechanical injury to trophic nerves, than to any reflex effect of neuralgia.

Thickening of bone is frequently found in old neuralgic subjects, at points near which the pain has been habitually felt; these, from being a consequence, become eventually a cause of neuralgia, by reason of the pressure which they exert upon sensory nerves. They result from the same pathological changes to which, in my last lecture, I attributed the persistent tenderness to the touch remaining after the subsidence of neuralgia attacks, *i. e.*, to a low grade of inflammatory action in the tissues contiguous to the painful nerve.

Mr. Anstie attempts to draw a distinction between reflex action, and what he considers the mode of production of some of these effects, *i. e.*, by transmission of disease from one root to another of the same nerve. This is simply shortening the circuit without changing the route. I cannot understand how an effect is to be

transmitted from a root of a nerve having one function, to that of another having another and different function without the intervention of a centre; as well might he attempt to transfer a telegram to a parallel line of wire without the intervention of a registering instrument.

Modifications in the secretory action of glands may occur, and frequently do, as reflex effects of neuralgia. A prominent illustration is furnished by the increased flow of tears accompanying neuralgia of the fifth nerve; and will indicate to you how the secretions of other glands, liver, kidney and other glands, are frequently found to be so greatly perverted in the cases of old neuralgics.

In my last lecture I indicated to you the prominent characteristics of neuralgia, and this affords the bases for diagnosis. Your diagnostic marks, therefore, will be—

1. The character of the pain, in reference to duration; it is either truly and completely intermittent, with intervals of entire ease, or at least with regularly marked periods of abatement, unaccounted for by other corresponding symptoms.

2. The pain is very much more severe than the amount of general constitutional disturbance would seem to justify. In former times, when the nature of nervous diseases was little understood, many a poor sufferer has been condemned by an ignorant doctor as *nervous*, because he complained of pain, and had no fever or dirty tongue, or diarrhœa, etc., to corroborate his complaints.

3. In the vast majority of cases, the pain is unilateral, and is limited to particular nerves and their branches. When bilateral it is symmetrical.

4. Fatigue, over-exertion of any kind, but especially of the mind, aggravates the pain.

Recognizing these characteristics or diagnostic marks clearly, you will then look for evidence of—

1. A neuralgic history, either personal or hereditary.

2. For some peripheral source of irritation, such as a mechanical irritant, a wound, a scar, carious tooth, etc.; the over-exertion of some particular organ, as the eye, for example.

3. For the evidences of some blood-poison, either malarial, rheumatic, or syphilitic.

4. In old cases look for tender points, where the nerves affected emerge from the bones.

5. And lastly, for reflex effects upon the circulation, the vaso-motor nerves, upon glandular secretion, or upon nutrition of tissues, or upon motor or sensory nerves, as in local paralyses or anæsthesiæ.

Maritz Benedict describes what he terms the *curve of intensity* of pain, and applies to the detection the exact location of the disease. Thus, for example, he asserts that if the disease be located in the peripheral extremity of the nerve, the pain is continuous; if in the course of the nerve trunk, it is paroxysmal; if in the nerve roots or centres, lancinating. Anstie cites, as confirming this theory, the pains of locomotor ataxia, which are lancinating.

The theory may be correct, but one fact is not broad enough for a foundation of a theory, and it cannot be accepted without a much greater mass of evidence than this. To this authority, (Anstie), belongs the limitation of the locality of neuralgia, to atrophy of the posterior roots of the nerves. He cites much testimony to sustain his position, but the question is yet *sub judice*.

Gentlemen, if you think that I have been tedious in detailing the characteristics of neuralgia, console yourselves with the fact that anæsthesia, pain, paralysis and convulsion, are the elementary factors in the whole range of spinal diseases; comprehending these, you have a good foundation upon which to build the nervous pathology of the future.

We come now to the treatment of neuralgia; and this,while it is to the patient the most important, is to the physician the most difficult portion of the whole subject.

It would be impossible for me to give you a list of all the remedies which have from time to time been suggested for the cure of neuralgia, for time would fail me, and you have them already, in the index to Wood & Bache's Dispensatory, which just about comprises the whole of them.

The treatment, however, may be divided into prophylactic, palliative, and curative.

Under the head of prophylactics, I include diet, and regimen, and tonic.

These should all be directed to the reconstruction of broken-down nerve tissue, specially, and of tissue in general. The diet should be a generous one. There can be no greater mistake than to starve neuralgics. Too many of them starve themselves volun-

tarily, under the impression that their sufferings result from dyspepsia—a mistaken idea. While it is true that this latter condition is not unfrequently an accompaniment of neuralgia, it is rather a local expression of the diminished nerve-power, which has already expressed itself in the neuralgia, than a cause of the pain. For you will find, as a general rule, that increase of appetite is a pretty accurate indication of the convalescence of the patient. The essential element of neuralgia being atrophy of nerve tissue, it follows that tissue-making, histogenetic, food must be supplied for the repair of that condition.

The food should consist largely of albuminous matters—meat, eggs, and above all, milk, containing, as you know it does, oil and phosphorous nerve-food; and this you will find your patients will bear, when they can take no other food. And last, but by no means the least, fatty matters, and the best of these is cod liver oil. This is often objected to by patients, who will tell you they have tried, can't take it, can't digest it, that it occasions diarrhœa, etc., etc. These objections are all valid as far as they go, but pertain rather to the mode and manner of administration than to the substance itself. The mistake usually made in the administration of cod liver oil, is its exhibition in too large doses, usually half an ounce. Give the oil in teaspoonful doses, and not until an hour or two after eating, in this manner it is not brought into contact with the gastric surface at all, by which it cannot possibly be absorbed, but mingled with the mass of food is carried into the duodenum.

Together with nutritious food, plenty of fresh air should be administered, with as much exercise as the patient will bear short of fatigue; and, most important of all, sleep. The most powerful means of restoring wasted nerve-power, in all cases in which it has been diminished, is sleep. On no account allow the subjects of nervous disease to be deprived of sleep; for every hour taken from the natural period of rest they will have to pay a fearful penalty.

In this connection, I may advise upon one subject about which you will frequently be consulted by anxious parents, that is, upon the amount of sleep to be allowed to children. Give them, invariably, all that they need; never wake a sleeping child, nor indeed a nervous patient, when it can be avoided.

A great deal of nonsense, poetical and prosaic, has been written and spoken on the subject of early rising, but be sure to give your patient a large dose of sleep, to be taken at early bedtime. If he can sleep eight hours, he will live the longer for it, and accomplish more in his lifetime than the early riser, who will probably retire early to his grave.

Of the palliative remedies I would mention, first, local applications. These comprise hot water, aconite, chloroform, or the two combined in some emollient vehicle, such as olive oil, belladonna extract, mustard, veratria in the form of ointment, and this applied by preference to the spinal column, and perhaps the most valuable of all, blisters. I have seen sciatica which resisted every other application, yield at once to blistering. Be careful, however, that the blisters do not remain too long, so as to establish a drain upon the blood-vessels, but rather apply them in the form of flying blisters, to be removed just before vesication commences, and reapplied in the immediate vicinity.

Under the head of palliative remedies, I should include hypodermic injections of morphia, although some of the highest authorities class it among the most valuable and powerful curative agents. Some indeed place it at the head of the list. It will undoubtedly produce sleep, and thus give the irritable nervous system time to appropriate nutrition and thus to accumulate force, or rather, to speak in more accurate physiological language, to resume a condition which will enable it to convert nutritive force into nerve-force.

I think this is all the advantage which can be claimed for any of the narcotico-stimulant remedies in use. The advantage is great, I admit, and is sometimes essential to the curative treatment, but I wish you to understand distinctly the true relations of these remedies to the disease, for unless you do, you will be misled in their application, and may find that you have made more opium-eaters than you have cured neuralgics.

One of the most valuable of this class of remedies is belladonna, or preferably its alkaloid atropia, in neuralgias of the pelvic viscera, uterine or ovarian. In my own hands it has no equal. My own impression of its effect is, that it is due to its power as a vaso-motor stimulant, in inducing contraction of the pelvic arteries, cutting off the supply of blood to the irritable nerves, and dimin-

ishing pressure upon them from the engorged vessels. In hemicrania it sometimes gives relief in the same way, I believe; to borrow from Professor Allen, "expertus loquor," that is, "I know how it is myself."

Under the head of curative treatment, I include nerve-tonics proper, that is to say, those agents which directly stimulate nerve-tissue and cause it to appropriate nerve-food from the blood, as distinguished from the effect of narcotics just referred to. These are—iron in all its forms and in large doses; the muriated tincture or tincture of the sesqui chloride; the pyrophosphate iron by hydrogen; the subcarbonate, and so on through the whole list: they are all valuable, and may be ranged about as I have mentioned them.

Strychnia is perhaps the most useful drug for the treatment of nervous diseases which we possess, while its toxic effects are manifested primarily through motor nerves. I believe its primary effect is upon the portion of the nervous system dominating the functions of nutrition. Its effect in neuralgia is sometimes most decided and rapid. It may be given alone, or, preferably, combined with iron. Phosphorus, in the form of dilute phosphoric acid, or phosphoretted oil, is highly esteemed by high authority. This agent possesses great theoretical value, in view of chemical composition of nerve-tissue into which it enters as a constituent more largely than into any other substance in nature. The objection to its use is the difficulty of administering it safely. Its compounds, phosphites and phosphates, I believe to be inert.

Prof. Hammond eulogizes highly the phosphide of zinc. I hope its effect will justify his encomiums, but I doubt it.

Arsenic, in the form of arsenite of potassa, or Fowler's solution, in five-drop doses, three times daily, largely diluted with water, and continued for a long time, five or six weeks, or even longer with intervals, is one of the most valuable nerve-tonics within our reach.

(To be continued.)

ARTICLE III.—*Diphtheritic Ophthalmia Treated with Carbolic Acid and Iodine.* By F. C. HOTZ, M.D., Oculist to the Cook County Hospital, Chicago.

Last year I published, in this journal, a number of cases of diphtheria which had been very successfully treated by the local use of a mixture of carbolic acid and iodine:

R. Acid Carbol. Cryst., ... dr. j.
Tinct. Iodine, ... dr. ss.
Aq. Dest., ... dr. v.
Alcohol, ... dr. j.

Among those cases there was one of diphtheritic ophthalmia of a very malignant character. The use of the above mixture arrested the progress of this inflammation so effectually, that after two days the eye was out of danger, and made a speedy and complete recovery.

These results were so encouraging, and so strengthened my belief of diphtheria being primarily a local affection, that I at once decided to use it again in similar cases; although the best authorities strongly urged in the treatment of diphtheritic ophthalmia, to abstain from all local use of irritating medicines. Their customary treatment, then, was the placing of the patient under good sanitary conditions, the use of ice (or warm poultices), and the liberal administration of mercury. The results of such treatment were, indeed, better than those obtained by energetic cauterization, which was previously so much in vogue. Still, this method of treatment must have been very unsatisfactory if such experienced oculists as Solberg Wells (in his Treatise on the Diseases of the Eye), had to confess "that we have, unfortunately, but little control over the disease during the first period." And just during this first, *i. e.*, diphtheric stage, the cornea is often destroyed, and so many eyes are lost for ever. To make our treatment satisfactory, we must have a remedy which curtails this most dangerous period of the diphtheritic ophthalmia. Now, after all my observations, the mixture of carbolic acid and iodine seemed to be the remedy wished for. It seemed to break up the diphtheritic (fibrinous) exudations—to melt them, as it were—and to induce their gradual reabsorption, without any disintegration of the inflamed tissues.

Fortunately, I may say, the diphtheritic ophthalmia is of rare occurrence in this part of our country, and an opportunity of trying the carbolated iodine mixture was not offered to me till August. Although it is one case only that I have to report, I will publish it to draw again the attention of the profession to a remedy which has given so great satisfaction to my professional friends and myself, and to induce others who may have ampler opportunity for its use to test its efficiency.

History of the case. P. W., aged twenty-five years, laborer, was admitted to the eye ward of Cook County Hospital, August 1, 1872. He had had gonorrhœa for several weeks, and had brought some gonorrhœal virus in his eyes. For one week before admission, his left eye suddenly began to inflame very severely, and four days later, his right eye showed the same signs of a violent inflammation. On admission, the eyelids were red, hot, very tender and greatly swollen, but, at the same time, of that peculiar, hard feeling due to a fibrinous infiltration of the soft tissues. This tenderness and stiffness of the lids rendered their eversion extremely difficult and painful. The conjunctiva of the lids was thickened, gray-white, impregnated, and covered by a fibrinous exudation, which could not be removed without pieces of the conjunctiva being torn out. The ocular conjunctiva also thickened, bloodless, yellow-white, like lard. The secretion of the conjunctiva was copious, but a thin, watery fluid, with some gray flakes of fibrine floating in it. There was no trace of the thick, purulent discharge peculiar to the blennorrhœa. The left cornea was completely necrotic; and in the right cornea, a small grayish-yellow cloud was discovered, near the inner margin. On account of this state of the cornea, warm water was used on the eyes, and calomel (half gr. every two hours) was given; but, on August 3d, no improvement could be noticed in the state of the conjunctiva, while the gray-yellow cloud in the right cornea had extended over its whole surface. The carbolated iodine mixture was then penciled over the conjunctival surface of the everted lids twice daily, and a compress, saturated with a diluted solution (thirty drops of the mixture to a teacupful of water) was kept on the eyes. This treatment very soon broke the violence of the inflammation, and operated so successfully that, on August 6th, all traces of diphtheritic exudation had disappeared. The then red and succulent

conjunctiva, the swollen, but soft and flabby lids, and the thick, creamy discharge, indicated that the disease had passed over into the second period, *i. e.*, into blennorrhœal inflammation. This readily healed under the use of sol. argent. nitrat. (scr. j to oz. j, aq. dest.), and the conjunctiva recovered its natural appearance. The improvement in the state of the conjunctiva was closely followed by a favorable change in the condition of the right cornea (the left cornea being totally mortified, was, of course, irretrievably lost). The cloud contracted and gathered into a small abscess in the internal half of the cornea, its external half having become perfectly clear and transparent. The abscess broke through the anterior epithelium, and, filling up with new tissue, it healed in a dense, white opacity near the inner margin of the cornea. But as the center of this membrane, opposite the pupil, had regained its full transparency, the patient had very good sight when he was discharged.

ARTICLE IV.—*The Present Status of the Pessary in Gynecological Practice.* By PHILIP ADOLPHUS, M.D., Chicago.

In classical treatises the pessary is the remedy *par excellence*, in flexions, versions, prolapse; in cases of irritable uterus, etc.

It is the aim of the writer to indicate its true sphere of usefulness, and to limit its indiscriminate use, without acquiescing exclusively in mere theories, whether inflammatory or mechanical.

The moral weight of the French school, led by Velpeau, imposed a theory and practice entirely mechanical, which, since 1854, has dominated over the medical world, and the result of which may still be seen in the thronged show-cases of the instrument vender, where pessaries of every shape, size and material are on exhibition.

Do uterine displacements, of themselves, produce any pathological state of the organ? Or, are these displacements caused and maintained by some complication, such as ulceration, engorgement, granulation, etc.?

Again, are the symptoms which accompany displacements, the results of nervous irritation, inflammatory congestion of the

womb, ovarian complications, or disturbance of the ganglionic system?

No mere theory of any man or school, however eminent, can determine this. Observation alone, conducted by practical men, not biased by any theory, can elicit a practice which will maintain the golden medium of safety.

In order to determine in what affections the pessary should be advantageously used, the writer will avail himself of the method of exclusion, and state where it ought not to be employed.

It should be interdicted in diseases superinduced by morbid menstruation, whether the menstrual flow is increased, deficient, or ceases entirely.

According to Tilt, "the ovary ranks above the uterus; the womb is the appendage of the ovaries, as the bladder is that of the kidneys. It is the ovary which calls the uterus into action, imparting to it a stimulus which is either healthy or morbid, periodical or continuous."

Therefore the inciting cause of menstruation resides in the ovary; not the womb. The periodic turgescence of the ovaries is admitted by all. How easily, then, may not an exciting cause, such as sexual intercourse, cold, emotional shocks, stem pessaries, caustics to the neck of the womb, instrumental measures, injections, etc., transform the only physiological process in the body which is attended by nervous disturbance, into a series of *pathological phenomena*, which in their various manifestations will awaken, by means of the sympathetic nerves and their ganglia, the *solar plexus*, which, through the instrumentality of the spinal nerves, connecting with the ganglia, transmits the morbid sensations to the brain.

For the sympathetic system, besides other functions, according to Bichat, Winslow, Brown-Sequard, and others, "constantly reacts upon the cerebro-spinal system; in health imparting a sense of strength, without any sensation referable to the organs of vegetative life; but should they be diseased, then the ganglionic nervous system convinces the brain that it is intimately associated with a kidney, a liver, or a womb."

Hence the various symptoms of physiological menstruation, viz., ganglionic cerebral and spinal; the sanguineous mucous, and gastro-intestinal discharges; its influence on the cutaneous, and

on the urinary surfaces, and urinary deposits, are intensified by becoming pathological. Thus we have these symptoms imputed by authors to various affections of the uterus, when in fact they originate in the ovaries.

In all these affections the condition of the pelvic organs should be considered; not merely the uterus, but the ovaries and fallopian tubes, are more or less morbidly influenced; therefore, the introduction of any foreign substance tends to produce cellulitis, pelvi-peritonitis, and hæmatocele. Indeed, the writer asserts that uterine diseases and uterine pathology should be entitled, respectively, ovario-uterine diseases, and ovario-uterine pathology. Were this opinion generally acknowledged by physicians, our practice would accord with correct anatomical and physiological principles.

Therefore, it is to be recommended, that, before commencing treatment in chronic diseases of the pelvic organs, complicating affections of their peritoneal coverings and the cellular tissue be excluded. Serious consequences are often caused by pessaries and other procedures, when milder expedients might have avoided any risk.

Pessaries are contra-indicated in cases of flexions where the womb is retained by cellular tissue, due to peritoneal exudations. It is here impossible to restore the organ without violently rupturing these adhesions.

In other cases where the uterus is movable, the intra-uterine pessary no doubt corrects the faulty position and retains the organ, yet its use is so dangerous, that it is universally condemned by the profession, and has consequently fallen into disuse.

Versions, as such, do not require treatment; when, however, the displaced womb is diseased, this becomes essential. Let the congestion and sub-acute inflammation that attends uterine versions be eliminated, and the pessary would be seldom required. The ever recurring ovarian irritation and uterine congestion is, however, ultimately extinguished by cessation of menstruation; and many women, at that period, with versions, lead without inconvenience an active life.

No pessary should be introduced when ovarian and metritic inflammation is present, or after the occurrence of the third month of pregnancy.

Lastly: cases where the vagina is delicately organized, making it intolerant of a hard substance, or where a prolapsed or inflamed ovary is present, likewise forbid its introduction.

Having eliminated those pathological states in which the application of the pessary is injurious, the writer will proceed to enumerate the conditions in which its use is advantageous.

Abortions are sometimes caused by a retroverted state of the uterus; this accident is obviated by wearing a pessary up to the period of quickening, for then the organ rises out of the pelvis.

When flexions of the uterus cause sterility, by preventing the entrance of semen into its cavity, the wearing of a pessary during intercourse is often followed by the happiest results.

Exceptionally, we find patients where the introduction of a pessary dissipates constitutional disturbances, irritation of the rectum and bladder; and enables immediate walking, without the slightest cognizance by the patient of the presence of the pessary. Every busy practitioner has met such cases.

However, the general average of cases teaches us, that with the exception of prolapse, uterine deviations seldom cause suffering. Uterine and ovarian congestions, inflammations, and neuralgias, are the cause of the pain and the other symptoms. It is, therefore, essential to treat the disease which may be present. Should this have disappeared, local mechanical means may be used.

The majority of patients of the poorer class, who suffer from prolapse, require a prompt and cheap remedy. A pessary here is useful to alleviate the disease; not to cure it. It is, however, necessary always primarily to treat complications, and try to remove them, before its introduction.

Thus, in complete prolapse, we have hypertrophy of the organ; in consequence of displacements of the bladder, we find fungous vegetations; hyperæmia and pain should be treated by leeches and anodynes. Moreover, it is necessary to remove ulcerations thoroughly before permanent retention is thought of.

The only complication in prolapsus which requires no preliminary treatment is hypertrophy of the womb.

The writer but echoes the voice of experienced specialists, when he asserts that the pessary fails in the hands of the inexperienced and the careless. As it emanates from the shop, it is the

raw material which has to be adapted to each individual case with the greatest nicety. Those only, who have made its application a study of years, and who have consequently had most success in its use, are entitled to be heard in its praise and condemnation. By far the majority of these adepts have far less confidence in the pessary than formerly, for they remove many more than they insert.

I shall close, with the words of the younger Storer, which fairly represents the voice of the profession: "In many cases, even where skill was used in their adaptation, they did harm. Whilst relieving the backache, difficulty of micturition and inability of walking, it calls the attention of the practitioner from sub-involution, hypertrophy, etc., which had originally occasioned the displacement, and leads the patient to think herself cured, while in reality the disease itself is becoming more chronic.

318 West Madison St.

Selections.

The Effects of Cold upon the System. By R. W. Murphy, M.D., Sacramento, Cal.

As an underlying primary cause of disease, there is, perhaps, none wider in extent or greater in variety than cold. Its influence is as broad as the human race, reaching from infancy to old age; embracing alike in its deathly grasp the rich and the poor—the king and the beggar. No occupation, position, nationality or color can claim exemption; all are alike its subjects. The effects of cold upon the system, and the diseases and mortality consequent upon it, are truly alarming. Its victims outnumber those of cholera, small-pox and rum, all combined. Thousands, yea, millions, are being carried away annually by this agent. All classes, both of physicians and laity, seem, by a common consent, to admit its claims to and supremacy over mankind, without questioning its right, or offering any resistance to its secret invasion. The temperance orders keep a standing army in the field to try to keep down the rum traffic, and prevent its poisonous influence among mankind. We also have our quarantine laws, for protection against the introduction of cholera, small-pox, or any epidemic disease calculated to increase our mortality reports, or render our sanitary condition less secure. And when such epidemics are found among

us, every effort is made by our boards of health to stay their onward spread; sanitary laws are strictly enforced, signals displayed, liberties restrained, and the various disinfectants used to keep down the enemy and drive him from our midst. While, upon the other hand, cold does not so much as receive a thought from any of our teachers of medicine, physiology or hygiene, unless they should be laboring under an attack of it at the time, although their attention is called to the subject almost daily; for you meet a friend, and how common the remark in connection with the compliments of the day, "All well, except a bad cold."

How often we hear the remark in the sick room, "Doctor, I have taken cold," or, "My child has taken cold;" and if the doctor is asked what is the cause of the sickness, he will doubtless, in a majority of cases, say it is from cold, especially if he is at a loss to comprehend the pathology of the disease. And the remark has become so proverbial, that the answer is quite satisfactory.

We have, as the result of this agent, a list of diseases that would well nigh exhaust the nosology of Cullen, and astonish the student of pathology. A classification of them would be too voluminous for this short essay. Suffice it to say that there is not a bone, nor muscle, nor tissue, in the system, but may have its physiological functions suspended, and become the seat of a pathological derangement, through the agency of cold. It should be regarded as the great enemy of physiology; as the father of pathology.

The external action of cold upon the system, when uniform, and continued for some time, produces general peripheral capillary contraction, depriving the parts of their usual amount of blood, thereby throwing a proportional amount upon the brain or some internal organ, causing hyperemia and congestion of the parts, with all the serious and fatal results we so often find. Professor Gross, in his remarks upon the primary effects of cold upon the general system, says: "They are those of an agreeable stimulant; the circulation is increased in force and frequency, a slight glow pervades the surface, and the individual is universally exhilarated. By and by this agreeable feeling is changed into one of pain and torpor; the brain is oppressed, as if under the influence of a powerful narcotic. A feeling of numbness and weight follows, with a peculiar prickling sensation." If the impression is maintained for any length of time, the parts become stiff and insensible, the blood, retreating from the surface, leaves it of a pale, whitish aspect, and gangrene and death soon follow.

Professor Gross further remarks that frost-bite was very prevalent among the English troops during their first winter in the Crimea, and the French suffered in still larger numbers, as well as more severely. On the 21st of January, 1855, not less than 2,500 cases of frost-bite were admitted into the French ambulances, and of these 800 died, death in many instances having, no doubt, been expe-

dited by the effects of erysipelas, pyemia and hospital gangrene. Out of 460,000 soldiers lost by Napoleon in his Russian campaign, at least one-half died from the direct effects of cold upon the system. I think the disease from the direct action of cold is much greater than is generally estimated, but, considerable as it may be, it is small as compared with the reflex chemical action of this agent.

How do we take cold?

We do not take cold, in the general acceptation of the term, by merely getting cold, especially if the action is uniform over the system. This is well illustrated in the use of the Turkish baths, when a person coming out of a room with a temperature of 100 or 110, and while in a high state of perspiration, is showered with cold water without any bad results.

The frequent falling into the water when cold as ice, or, in some instances, breaking the ice to get to the water to immerse a subject, with no bad results, are additional evidences of the fact. But let one of those same persons get their feet wet, or a current of cold air blow across them when in a state of perspiration, or recline a few seconds upon the damp ground, or against a damp, cold wall, and the results are, they have taken cold. Dr. Austin Flint, in the third edition of his "Practice," says, in his remarks upon bronchitis, that the "disease is frequently, if not generally, produced by the action of cold." Exposure to cold is supposed to produce this disease by interrupting the eliminative functions of the skin, whereby an increased duty is thrown upon the pulmonary mucous membranes, thereby inducing congestion.

"This view of the causation is inconsistent with the fact, that a large proportion of cases of bronchitis are not traceable to any unusual exposure to cold. There is abundant evidence, however, to show that exposure of a portion of the body to a current of air is liable to excite an attack of this disease."

Another idea, very generally entertained, that the application of cold to a part of the system, depriving the part of its usual amount of blood by producing an increased capillary contraction, which causes an undue amount of blood to be thrown upon the weakest parts of the system, creating hyperemia and congestion of those parts, is also unsupported by facts. If this theory be correct, a person who is enfeebled from the loss of blood, whose volume has been reduced forty or fifty ounces, should not take cold as readily as the person whose system is full of blood, and every organ supplied with all it can contain consistent with the laws of health. But, do we not find the reverse to be true? Again, should this theory be correct, the catamenial flow should be increased, instead of suppressed or suspended, from the action of cold, since the discharge is found to be identical with the blood, and the uterus to be in as highly an impressible condition as is consistent with the laws

of physiology. But our experience renders a different verdict. Local hemorrhages should be increased when the application of cold is to some other part of the system, instead of retarded or suppressed, as we often find to be the case when a person takes a bad cold. It is the reflex chemical action of cold upon the system that claims our attention at present.

It is now an established fact, according to Bernard, Brown-Sequard, and others, that the contractile elements of the blood-vessels are presided over by motor nerves. These are, in consequence, named vaso-motor nerves. Their action produces diminution in the caliber of the blood-vessels. If the action of the vaso-motor nerves be suspended, the blood-vessels dilate, most probably because their contractile elements being paralyzed, the pressure of the blood is able to distend the vessels. The vaso-motor nerves are derived immediately from the sympathetic ganglia. But Ludwig and Thiry have shown that the nerve-cells presiding over them are not contained in the sympathetic ganglia, but in the medulla oblongata. They locate this great vaso-motor center, in the experiments they made, to extend from one millimeter below the corpora quadrigemina to five millimeters above the calamus. It lies on either side, at a little distance from the middle line. From this center, the vaso-motor nerves pass down the spinal cord to all of the system. They leave the cord in the anterior roots of the spinal nerves; from thence they either pass through or receive branches from the ganglia upon the sympathetic and proceed to the blood-vessels.—*London Lancet*, of April, 1872. There are some small peripheral vaso-motor centers capable, no doubt, of producing a reflection of nerve-force, but to so limited an extent as not to claim our attention at present.

Professor Rutherford, of King's College, in the same article, says: "The general vaso-motor center in the medulla oblongata appears to be in almost constant action, thereby keeping up some degree of contraction of the vessels. The activity of the center may be increased or diminished by the excitement of various nerves. It may be increased by stimulating sensory nerves, by accumulation of carbonic acid in the blood, and by certain emotions. *Increase of its action* following the *stimulation* of *afferent nerves* leads us to think that there is a reflex-nerve mechanism whose nerve-center is in the medulla oblongata."

The action of cold upon the system *through* this great vaso-motor center is effected from all points through the afferent nerves. From the exceedingly fine peripheral nervous structure, the afferent nerves have their origin in fine nerve-tubes, which contain their protean threads or axis cylinder; these form into fine bundles, surrounded by a medullary sheath, which prevents the interruption of molecular motion from the other forces or motions in the system.

According to Herbert Spencer, "these fibres have their termini in a nerve vesicle or cell. The very delicate membrane that envelopes the nerve fibres becomes the inner lining of the nerve-cell vesicle, and is a non-conductor of molecular motion. The nerve vesicle not only forms a connecting link between the afferent, efferent and centripetal nerves, but it also becomes a reservoir of molecular motion, which is given out when disturbed, being composed of vesicular matter."

The lines of continuity from this vesicle, or primary nerve-center, to a higher one approximating the spinal cord, are called by some the centripetal nerves, but are identical with the afferent nerves, with an increased capacity for conveying molecular motion. Through these nerves and vesicles the peripheral disturbances reach the spinal cord, and through the cord, by similar nerves, up to the great vaso-motor center in the medulla oblongata, where the force is reflected through the vaso-motor nerves to any or all parts of the system. Dr. Dittman, in his experiments, says he thinks it is certain that there is a system of fibres in the substance of the spinal cord which, though they do not belong to nerve roots, are capable of responding to the action of direct stimuli, and can transmit the impressions thus generated along the whole length of the spinal cord up to the medulla oblongata, where they undergo reflection into motor nerves.—*London Lancet*, of May, 1872.

The fact that the general application of cold to all the system at once does not result in the person taking cold, is because the molecular action of all the afferent nerves is uniform; that each and all of the vaso-motor centers are alike stimulated, and their action, although greatly intensified, is uniform; and their action being uniform, we have the like uniformity in the contraction and dilatation of the vascular system, consequently the equilibrium of the vital forces remains undisturbed. But it is not so when only a portion of the system is exposed to the stimulating action of this agent. The force transmitted by chemical action to the great vaso-motor center when only a small portion of the afferent nerves is called into action, is not sufficient to stimulate the entire vaso-motor center to action; the result is, that the force transmitted and reflected only calls into action one or two of the vaso-motor nerves. The action of these nerves is greatly intensified, causing a corresponding contraction of the blood-vessels over which they preside, the action falling mostly upon the capillaries and small arteries, which become so contracted as to interrupt and greatly retard the circulation of the blood in the parts, and we have, as the result, congestion, diminished supply of oxygen, blood poisoning.

With this view of the action of cold upon the system, we can readily understand how it is that a "slight peripheral disturbance from cold, setting up molecular action in the afferent nerves, which

wave of molecular action upon reaching the first nerve vesicle, disturbs the unstable vesicular matter; this gives off its latent force, which adds to the force already being sent through the afferent nerves. From this primary nerve-center or reservoir of molecular motion, we have an *increased* molecular action propagated along the centripetal nerves until it reaches the great vaso-motor center, where it undergoes reflection into some of the vaso-motor nerves," whose terminal action may be in the lungs, the throat, the liver, the kidneys, the heart, the pleura, the eye, or the ear, producing disease of any or all the organs and tissues in the system. When the terminal action falls upon the joints or muscles, rheumatism, ostitis and periostitis are in like manner produced.

We think the action of cold is manifest in the development of boils, abscesses and carbuncles. In these the chemical action is quite limited in extent, but the intensity is sufficient to cause congestion of the parts, which deprives the protoplasm in the tissue-cells of the supply of oxygen necessary to sustain its vital relation; death of the cells is the result. This effete matter, though not larger than a pin's head, sustains the relation of a foreign body, and, unless absorbed, must result in elimination by suppuration. It further manifests itself in the development of the various tumors, both malignant and non-malignant. This is most likely caused by a diminished supply of oxygen, which so alters the vital condition of the cells that their physiological functions are no longer sustained. This altered condition of the cells still retains a *morbid* vital relation with the power to assimilate or metamorphose cells of its own character; thus building up, as it were, an independent growth in the system.

Cold, as a chemical agent, is most potent, as we all know. This agent, acting upon the peripheral nerve structures, as before remarked, evolves, by chemical action, a force which is communicated by molecular action along the afferent nerves to the great vaso-motor center.

This, like any other force in nature, naturally follows the line of least resistance; hence, the vaso-motor nerves most impressible would receive the force thus transmitted and reflected. The impressibility of nerve depends upon its peculiar vitality, whereby the molecules act readily and with such uniformity as to transmit an isomeric wave uninterrupted, or with greater facility than its neighbor.

Another fact in connection with nerve action is, that the more frequently a wave of molecular action is propagated along a nerve, the more readily will the molecules act. A person taking cold to-day, which is reflected into the lungs or throat, will be more likely to receive the next impression along the same line of nerves, than in any other part of the system.

The vital condition of the nerves is constantly undergoing a

change, for, like other tissues, these nerve molecules are giving off effete matter and receiving new material and vitality from the blood, and are liable to the vicissitudes and interruptions that other tissues are, being at times more susceptible to impressions than at others.

A person may have such a condition of the nervous system to-day that exposure to cold fails to excite molecular action in the afferent nerves; but, in less than twenty-four hours, may receive and transmit the same with most wonderful effects. It would seem that the vaso-motor nerves presiding over the uterus have their vitality elevated, and the molecules rendered more susceptible to impressions during the catamenial flow than at other periods, which accounts for the catamenial suppression from the chemical action of cold.

We should also bear in mind that the greater the distance traversed by the afferent nerves, and the greater the number of nerve-vesicles contained in the line, the greater will be the force transmitted to the medulla oblongata. And well might the poet, upon beholding this strange phenomenon of nature, say:

> "The feet with the head hold wedded intercourse,
> And all by moods and tides."

The sanitary condition of the atmosphere has much to do with the chemical action of cold upon the system. Niemeyer, in his Practice, in speaking of influenza, says "that in the year 1732 it appeared through Europe, from east to west, in the form of an epidemic; attacked at least one-half of the population—the disease being dangerous to children and old persons. Since then, it has appeared several times as an epidemic—in 1800, also in 1835, with like results." And this able expounder of medicine and pathology assigns no other cause for this disease than cold. We find it true, that here in California, when we have those heavy northerly blows that visit us annually, the electrical and sanitary condition of the atmosphere is greatly changed, and the complaint of having taken a cold is very common, if not an epidemic. I think it is safe to predict that the time is not very remote when chemists will furnish the means by which the sanitary condition of the atmosphere will be as easily read as the thermal condition is at present.

You may regard my prediction as being both premature and mythical, but an element so indispensable to human life has not received that attention at the hands of science that its importance demands.

Moisture is another great auxiliary to the chemical action of cold upon the system, by reducing the temperature to a lower standard; also, by softening the effete cuticle, and rendering the peripheral nerve-structure more susceptible to chemical action. Hence it is that persons putting on under garments a little damp, or getting a foot wet, are liable to take cold.

Habit, also, has much to do with our taking cold, as is shown when a person who has been accustomed to wear a necklace, even small, will often take cold upon removing it. The removing of flannels from children, or taking off their shoes and stockings and running barefoot upon the damp ground, will cause them, most likely, to take cold; but in a short time, if continued in, the cold fails to excite molecular action in the afferent nerves, and the child can run in the cold, even in the snow, barefoot, with impunity. The state of the mind has much to do with our taking cold.

An excited, determined state of the mind liberates and sets up an internal molecular action from the cerebral organs, which may prevent the wave of molecular action from the afferent nerves reaching the medulla oblongata. But let the mind be at rest, or the individual be asleep, and the same chemical action which had been stayed in its progress now meets with no resistance, and the force, though light, is felt in some part of our system, interrupting the harmonious laws of physiology. I do not propose to consider cold as a therapeutical agent at present; its claims as such, in the hands of the skillful physician, are worthy of our consideration.

What is it to take cold? It is a suppression or suspension of the respiration of the parts, caused by the reflex chemical action of cold depriving the parts of their normal supply of oxygen, and causing a retarded or suspended elimination of carbonic acid.

What are the results? Dr. J. C. Peters, of New York, says: "We know that muscular tissue has natural electric currents of its own, which are constantly passing in certain definite directions as determined by delicate galvanometers. The center of each muscle-molecule is held to be normally in a state of positive electricity, whilst its poles or sides next the other nearest molecules are negative, thus resembling a zinc center and copper poles when immersed in diluted acid. The normal muscle currents are derived from the molecular chemical changes constantly going on in the nutrition of living tissues, and are connected with the process of osmosis which takes place through the sarcolemma. Disturbances of these chemical osmotic processes cause irritability and irregular contractions of the muscles."—*New York Medical Record.*

With the authority just referred to, I think I am warranted in saying that every tissue in the system, as well as the muscles, have their vital or electrical currents, which are governed and kept up by a law of animal chemistry; that the oxygenized or vitalized protoplasm in the cells is the basis of all healthy physiological functions of the system; and the results of our taking cold are a diminished supply of oxygen to the tissue, which impoverishes the protoplasm in the cells, and is the underlying cause of a large proportion of diseases. "And as the different sounds that greet the auditory are but so many altered conditions of the atmosphere, and our different thoughts but so many altered conditions of the ethereal

essence of our spiritual natures," so are the various diseases but so many altered conditions of the vital forces of the system.

What can be done to prevent persons from taking cold? Uniformity of temperature is the great desideratum, together with a thorough and uniform system of ventilation, and uniformity of habit.

Thermometry in Health and Disease. By F. C. CURTIS, M.D., Albany, New York.

Within a few years, comparatively, various mechanical contrivances have been devised for assisting in the diagnosis and prognosis of diseases, and for obtaining indications for treatment. The thermometer is one of these physical assistants, the clinical use of which is the subject of this paper. Like all the others, it is only an assistant, but is at least that, and I believe its use should be more extensive than it is. Outside of the hospitals I doubt if it is used much, and, while the hospital is the place to study the instrument, because the patients are there in a body and always close at hand, still it is very portable; and, although regularity of observation is a vital point in its use, yet a single observation is often of great value.

The instrument used is a modification of the ordinary mercurial thermometer. A thermo-electric apparatus has been devised which surpasses in delicacy the best mercurial instrument, and by which the temperature of internal parts can be obtained. It consists of two wires, of different metals, soldered together, and having their free ends brought into communication with a thermo-electric multiplier. The wires are passed into the tissues like acupuncture-needles, and the temperature of the point of contact of the two metals is indicated. It has thus been found that the body is cooler toward the surface. But for obvious reasons this apparatus is only adapted to scientific investigation, and the mercurial thermometer is the only instrument of practical usefulness.

Great care should be used in getting an accurate thermometer, especially if the observations are to be preserved for reference. There may be good American instruments made, but I have never seen one. I found in the New York Hospital three, of New York makers, all of which varied nearly a degree. A fault which renders an instrument nearly useless, is an unequal variation between different degrees. I believe the best—most accurate as well as portable—is that made by Casella, of London. The Germans make very good instruments, but as a rule they are graduated to the scale of Reaumur, or Centigrade. Casella's are carefully made and tested, and are graduated to fifths of a degree. The instrument should be sufficiently delicate to reach its maximum in three minutes,

except in a very emaciated subject; some will continue to rise for ten minutes. It is best to have it self-registering. In these, the index consists of half an inch of mercury detached from the rest by a minute speck of air. This avoids the necessity of stooping over in close contact with the patient in such diseases as typhoid, which are more or less contagious; the sick-room, too, is often darkened so that it is not easy to read it *in situ;* it can be trusted to the nurse for one of the daily observations better than the non-registering instruments.

The axilla is the usual point for taking the temperature, and if another point is chosen, it should be noted, as the temperature differs. It should be properly inserted. On the brachial side of the axilla, a little down, it will be noticed that a fold forms as the arm is carried across the body. Lay the bulb in this place, first drawing the clothing well away, and then carry the hand over to the opposite shoulder, the object being to surround the bulb entirely by living tissue. With female patients who may feel a delicacy toward exposure, direct the nurse to lay a towel over the chest before opening the clothing enough to insert the bulb.

Although single observations are often valuable, it is much better to take them continuously. The relation of morning to evening temperature, and the range from day to day, are very valuable, the main usefulness of the instrument being here. If taken continuously they should be regularly, from 7 to 9 o'clock in the morning, and 5 to 7 o'clock in the evening.

The clinical thermometer indicates pyrexia and measures its amount with accuracy. The value of thus accurately determining the amount of heat in disease was first insisted on by De Haen, of Vienna, about a hundred years ago. Heat of body above the normal has been noted as indicating disease ever since medicine was practiced, and is generally recognized by the people as pathological. But the only indication of it has been the hand of the doctor, or the sensations of the patient. Neither of these is reliable; the former is only comparative, varying with the warmth of the hand—the latter cannot be depended on, as is shown in a chill, when the body feels cold to the patient, though really the temperature is elevated. I had been taking the temperature of a patient with erysipelas for several days, the case had gone on to convalescence, when, one evening as I came to take it again, I found the patient in a chill initiatory of relapse, and while in it I found the temperature above what it had been, and 2° above normal. It may be that in these cases the skin is really colder from the nervous contraction of the blood-vessels, but the blood is warmer, and begins to be so before the chill comes on.

But, aside from the mere detection of pyrexia, which of course can in most cases be detected without an instrument, there is the accuracy of measuring it which can be gained by it alone. The

value of this I can show farther on, in getting the typical range of diseases, in finding the extremely high ranges, as 108° or 110°, which by the hand cannot be distinguished from considerably lower ones, etc. Anything which makes medicine less an art and more a science, and does away, in any degree, with the vast amount of uncertainty which surrounds our practice, ought to be cherished as it deserves.

Pyrexia is abnormal elevation of temperature. This definition implies the possibility of changes within the bounds of health, and such is the case. The normal temperature of the axilla of adults is 98.5°, and the range of healthy fluctuation is quite limited. Climate, exercise, different hours of the day, are some of the agents affecting it. Dr. John Davy, who experimented largely, found variations between temperate and tropical regions. The average temperature is nearly a degree higher in tropical climates. In temperate, the *maximum* temperature is found in the early morning, being on the average 98.7°; falling steadily through the day until midnight, when it is 97.9°. In tropical regions the minimum temperature is in the morning, being 98.05° on an average, from which it rises steadily until night to 99°, a variation of nearly a degree. The variations of temperature of the air do not necessarily affect it, though exposure to extreme heat or cold may do so. Active exercise short of fatigue raises it; beyond this point it lowers it. It falls after a full meal, but rises as digestion advances. It is thus seen that variations of temperature between 98° and 99° do not necessarily indicate disease.

There are other variations, peculiar to early life, to the puerperal state, which is in the border-line between physiology and pathology, and also there is difference of temperature in different parts of the body. Dr. Forster gives, in the *Journal fur Kinderkrankheiten*, 1862, the result of an extensive series of observations on the newly born, the temperature being taken in the axilla. At the moment of birth the temperature is the same as that of the mother; it falls directly until in from fifteen minutes to two hours it reaches 28.97° Reaumur or 97.18° Fahr., the average of all taken; the lowest taken was 95.5°. After this fall, immediately following birth, the temperature gradually rises for thirty-six hours, reaching a height of 99.6° Fahr. After the thirty-sixth hour it falls somewhat, but slowly, for four days, when it reaches about the temperature of the healthy adult. It soon rises again, from the fifth to the eighth day, but this oscillation is slight in amount, reaching an average of 99°. It falls somewhat after this, but the temperature of young children is, as a rule, higher than that of adults. The daily range too is greater, amounting to a variation, according to Mr. Finlayson, of 2°. According to the same observer, there is invariably an evening fall in temperature, being lowest between 7 and 9 P. M., and highest about 4 A. M., there being during the day but trifling

variation. These normal variations should be borne in mind when using the thermometer in children.

In the later months of pregnancy the temperature of the body is somewhat increased, according to Mr. Squier, in the London *Lancet*. It is not raised much by a natural labor, any more than strong exertion of any other kind affects the person in health. Toward the close of labor the vagina shows an elevated temperature, in one case being noted as high as 99.9°. In prolonged labor, where muscular exertion is severe and continued, a temperature of 102° is sometimes reached, which can hardly be called normal. It subsides soon after labor. The slight febrile action coming on two or three days after labor, called milk-fever, has an elevation of temperature variable both as to height and duration. It is more prolonged in primiparæ, and has been noted as high as 102° or even 104.3°, lasting in the latter case for twelve days, though the breasts were not affected. A sore nipple, or slight inflammation of the breast, raises the temperature.

Different parts of the body have different temperatures. There is a difference of 1° between the covered parts of the surface, as the axilla, where the bulb may be entirely surrounded by living tissue, and the cavities which open externally—the mouth, rectum, and vagina. I believe the lungs are cooler than the abdominal organs, because of the entrance of outside air, and there is a difference in temperature of the blood in the two sides of the heart. The blood coming to the heart by the superior vena cava is of lower temperature than that of the inferior. A recent number of the London *Lancet* contains the interesting fact, that the cranial cavity is of lower temperature than the body generally. There is a difference of $\frac{7}{10}$° Centigrade, or more than one degree Fahr., between the cranial temperature and that of the rectum. Chloroform lowers the temperature of the body generally, and this is more marked in the cranium. The same is true of chloral, and of morphia in large doses, though small doses increase it. But in poisoning by alcohol, the cranial temperature rises above that of the rectum. The experiments were made on dogs and other lower animals, but how the temperature of the cranium was taken is not stated. Mr. Blake, (*Medical Times and Gazette*,) found a difference of from $\frac{1}{2}$° to 1° in the left side of the body over the right, but only during exertion. It was more marked when exercising under a powerful sun.

In this connection I may also speak of *post-mortem* elevation of temperature. De Haen, who first used the thermometer, observed a rise of temperature in the death-agony, which persisted after death. The point being forgotten, was recently re-established, and a prize-article written on it by Valentin, at the University of Berne. Experiments were made on various lower animals. It was found to be true in all cases. It is due both to an increased develop-

ment of heat, and to diminished loss of heat. The vital processes which ordinarily develop heat during life persist after death—that is, after the heart ceases to beat—especially certain nervous influences; and probably *post-mortem* disintegration and decomposition may aid in the development of heat. *Rigor mortis* is thought to have but little influence. It would be interesting to know how the *post-mortem* temperature is after sunstroke, in which disease the body-heat is very high, and after death there is no *rigor mortis*.

The retention of heat after death is favored by the cessation of perspiration, and the consequent lessened evaporation from the skin. Evaporation of perspiration is the safety-valve in life to those exposed to heat. As long as this is active, there is little danger of the high ranges of temperature. In sunstroke it is stopped, and when the body-heat reaches 110°, as reported by Wilson Fox in rheumatism, the perspiration, which is usually excessive in this disease, has stopped.

I have thus, somewhat rapidly, sketched those variations and conditions of thermometry which are outside of that portion of the subject which considers them in the sick patient. We find the healthy body maintaining a temperature varying very little, though surrounded by an atmosphere which changes from day to day, which in the course of the year goes through wide ranges, and in the torrid zone has a constant temperature very far removed from that of the frigid. The source of this animal heat is in the tissues themselves, in which there is constantly going on an endless variety of solutions, combinations, and decompositions, by means of which is effected the metamorphosis of food into tissue, and of tissue into effete matter. But the amount of this heat-producing tissue-change varies continually; to prevent a corresponding increase of heat, we have the cutaneous perspiration, the evaporation of which causes the heat to become latent. So the temperature is continually regulated, and the almost unavarying standard maintained. Variation from the standard in disease is due to change in the one or the other, or of their relation to each other.

What is the advantage afforded by the use of the thermometer in disease?

In the first place, it shows whether or not pyrexia actually exists. This seems to be a small matter, but really it is often a valuable item of knowledge. Often diagnosis is very difficult, especially with children, who may present grave symptoms on slight causes. For instance, not long ago I saw a boy ten years of age who had been taken with convulsions, headache, vomiting, and loss of appetite; the bowels were regular, the pulse irritable, but not accelerated, and he lay quietly in bed, with a peculiar nervous look of the eyes. I found his temperature quite normal, and concluded that his convulsions were due to peripheral irritation, not to

central lesion. His convulsions were relieved by a full cathartic, and their cause was found to be eating hard Bologna sausage. There are many cases where the thermometer will give this negative help.

It has another advantage which belongs to it alone; it shows, *before other symptoms can*, the existence of disease and changes in the course of disease. The temperature of the body is more sensitive to diseased action than either the pulse or respiration. In intermittent fever the temperature begins to rise several hours before the exacerbation comes on, and after the disease has been reduced by treatment, and all other symptoms have disappeared, a periodic rise of temperature may be noted, showing that the cure is not yet perfect. In typhoid fever the daily rise and fall of temperature is very regular, and any marked deviation from this is always premonitory of something new in the course of the disease. A sudden reduction is said to show that hæmorrhage of the bowels has taken place, from sloughing of Peyer's patches, and several days may elapse before we get evidence of it from the stools. In pneumonia a sudden fall in temperature about the seventh day shows that convalescence has set in, though other symptoms may be as grave as ever. In all acute diseases a fall in temperature is, as a rule, a favorable sign.

The converse is in like manner true; rise of temperature, after it has once fallen, points to a relapse. We see this mainly in diseases, as erysipelas, which are liable to relapses. This rise will be found to take place before the premonitory chill, and will be a marked elevation above the regular rise and fall of the steady course of the disease.

There are two or three general rules of temperature in disease which may be spoken of here: First, there is, as a rule, evening exacerbation, the evening temperature being higher than the morning. In some acute diseases, however, the line of thermometric range is steadily upward for a few days, as if carried along by the impulse of the disease. But usually, even in the most acute diseases, there is a fall in the morning from the temperature of the preceding evening; we know that it is common for all sick people to feel better in the morning, and worse as the afternoon wears away.

There is another peculiar fact, familiar to all who use the instrument, though I have not seen it noted in the books. In some acute diseases the temperature falls *below* the normal standard of health as soon as the acute stage is passed. It has been noted below 95° under these circumstances. There are but few other conditions in which a temperature below that of health is noted. Dr. E. R. Hun found it so low as 94.5° in a case of Bright's disease, in which the œdema was excessive, a few hours before convulsions occurred, in which the patient shortly afterward died. The lowest temperatures have been found in shock. This, from

all causes, operations, fractures, burns, etc., seems to be attended with more or less depression of temperature. In the "Biennial Restrospect" of the New Sydenham Society, for 1871, Mr. Wagstaffe is recorded as having found, in a case of cut-throat which recovered, a depression to 91.2°, due probably to loss of blood. In a fatal case of fractured spine, a fall of 16.65° was noted. This gives us a hint that nervous influences have a part in maintaining and regulating animal heat.

The thermometer is a help in prognosis. The fact has been alluded to under a previous head, that it shows change in the course of disease before other symptoms can. Individual diseases have their peculiarities of thermometric range, and a marked variation from this indicates a grave or favorable termination. In typhoid fever an evening temperature of 103.5° shows a mild case; if it rises to 105°, dropping only to 104° in the morning, it is very grave. In pneumonia, 104° shows a severe attack, especially coming on early in its course. All diseases are not alike in regard to the height to which the thermometer may go within the bounds of safety. Cases of sunstroke have been recovered from in which the temperature of 110° has been reached; and Dr. Wilson Fox reports, in the London *Lancet*, the same height, in a case of rheumatism, which recovered. A few weeks ago I took the temperature for several days in a case of pneumonia, and finally found a morning temperature of 104.2°, pulse 112, and respiration 32. The evening temperature of the same day was 102.8°, which, being so decided a fall from morning to evening, was evidence that the crisis was past, although the pulse was accelerated to 120, and the respiration to 48. The fall here was not sufficient for the most practiced hand to detect. In a case of typhoid, looked upon as grave by the attending physician, I was enabled by the thermometer to give a favorable prognosis.

Can a diagnosis be made by the daily fluctuations of the thermometer? It would not be believed at first thought that any one would ever be driven to this means of diagnosis, but I have seen a case of gummy tumor of the brain, which in good hands was thought to be typhus fever, and this instrument would settle the question between them with certainty. Some diseases running a regular course have a typical range of temperature, so that one familiar with the subject, turning over the records of vital signs, can distinguish them one from another. In typhoid fever we see a good deal of regularity of the temperature line. Mounting gradually during the first week up above 100°, it holds there, with slight morning fall, till about the twenty-third day, when a considerable fall takes place, and we see the peculiarity of a nearly normal morning temperature and a high evening exacerbation, making long lines in the fever-curve. Typhus, again, is like typhoid, only the morning fall comes one week earlier. In the eruptive fevers gen-

erally the evening exacerbation is slight, the fever line, instead of being zigzag, running in a general straight line upward until a certain stage of the disease, and then downward in a likewise straight line. An intermittent of quotidian type shows a fever-line quite similar to that of the third week of typhoid; the tertian differs only in the skipping of one day. These are specimens of the typical thermometric ranges of diseases. It is evident how often diagnosis, that difficult branch of medicine, may be helped out by the thermometer.

Thermometry gives indications for treatment. An exceedingly high temperature is of itself dangerous to life from its effect on the nerve-centres, and should be treated by active antiphlogistics, regardless of the primary disease. This is illustrated by the cases reported by Wilson Fox, of rheumatism, in which the temperature rose to 110°, and which recovered under the use of cold douches and baths. A very forcible illustration of the value of the thermometer, as a help in treatment, is seen in pericarditis occurring in the course of rheumatism. Every case of this disease should be watched carefully with the thermometer, for by it we get premonitions of the occurrence of pericarditis, and are enabled to get the start of it. We are told, and very properly, to listen every day to the heart-sounds, but the fact is evident that, if you wait for cardiac murmurs, you are waiting simply till the serous surfaces are covered with exudation to produce them. I have seen one case in which by most careful examination no murmurs were heard, but the autopsy showed four ounces of bloody serum in the pericardium, and the surfaces covered with a fibrinous exudate presenting the "bread-and-butter" appearance. The serum separated the membranes and prevented friction-sounds. The pulse is sensitive to acute disease of the heart, but it is liable to extraneous disturbance. So, too, with the respiration. And, more than all, thermometric change occurs before anything else, and so is premonitory, in this and other diseases.

Febrile action is inconsistent with health, and an instrument which indicates and measures it, translates what is going on in the system. The fever is in many cases a safer guide than anything else. The pulse is disturbed by nervous excitement; exertion increases the respiration; the countenance gives valuable indications in sick children especially, but often it tells nothing; the history cannot always be gained clearly. But the temperature can always be taken, and has one advantage over most other means of diagnosis: it is uninfluenced by extraneous circumstances, and always tells the truth. Its language is to be learned by study and observation.

To sum up in a sentence the valuable points of the thermometer: it shows the existence of febrile exacerbation; it is premonitory of change in the course of a disease; it helps in diagnosis, prognosis, and treatment; and its indications are uninfluenced by any outside circumstance whatsoever.—*N. Y. Med. Jour.*

On the Physical Education and Training of Children. By H. W. Boone, M.D., San Francisco.

A very suggestive writer remarks, the first requisite of success in life is "to be a good animal;" and to be a nation of good animals is the first condition of national prosperity. The event of war often turns on the strength and hardiness of soldiers; and the contests of commerce are greatly decided by the bodily endurance of producers. Under the keen competition of life few of us can stand the application required without more or less injury. Thousands break down under the strain they are subjected to. This makes it specially important that children should be trained with a view to fit them physically, as well as mentally, to bear the wear and tear of the life they will have to encounter. Fortunately this matter is attracting much more attention than it did formerly, and we propose some statement of the views sanctioned by those who take the lead in the discussion of this subject.

The great attention which has been paid to the improvement of stock, has shown how all the qualities of strength, speed and endurance can surely be enhanced by attention to proper laws, and that a nobler and finer animal may be developed. The same rule applies to man, for it is a fact which no one will dispute, that man is subject to the same organic laws as the lower creatures.

First let us consider the subject of nutrition. While in a former age there was a tendency to general over-eating, there seems now to be a reaction, and more particularly among the educated classes it is to be feared that children do not get either the quantity or quality of food best suited to the wants of their growing organisms. While over-feeding and under-feeding are both bad, the latter is far the worst. The natural appetites are a very good guide, and it is only where they have been pampered that they fail to give proper indications. The child who has been fed on a liberal supply of wholesome, nutritious food, and always has enough, is not in danger of over-eating itself, while, if not treated to dainties, it will not clamor for things it has no idea of. Some of the things universally desired by children are sternly denied them by most parents, from mistaken notions and the force of traditions. All children are fond of sweets, and physiology teaches us what an important part sugar plays in the vital processes; together with fat, it is eventually oxydized, and there is an accompanying evolution of heat. The researches of Claude Bernard go to show that sugar is produced in very great quantity by the liver, and must have some important function to perform. When we see children with a strong desire for this kind of food, and note at the same time that they have usually a marked dislike to that food which gives out the greatest amount of heat during its oxidation, namely, fat, there is reason to think that excess of one compensates for defect of

the other; that the organism demands more sugar, because it cannot deal with so much fat.

Then children are fond of vegetable acids. Vegetable acids are good tonics, and ripe fruit aids digestion, and is especially valuable in regulating the bowels. There is no reason why children should not partake of both sweets and vegetable acids. On the contrary, within due bounds, the assimilation of both is advantageous and even necessary. And yet there is a general tendency to forbid their use to children, who consequently eat green fruit, or gorge themselves with sweets whenever they get a chance, and the illness following unwonted excesses is made the justification for a total exclusion of these articles from their dietary. With equal justice might it be argued that, as unaccustomed exertion produces depression and fatigue, all exercise is pernicious, and should be prohibited. Neither parents nor physicians can get up an arbitrary standard of feeding, and expect that all children will be benefited by it. The demand of the system for food varies with the temperature, the hygrometric condition of the air, with the electric state of the air; varies according to the exercise taken, the kind and quality of food eaten at the last meal, and the rapidity with which that meal was digested. How can we judge of all these things? Nature has provided every little mortal with the same means of sensation as we have, and our function should be neither to check nor force appetite, but to supply the proper and requisite nourishment. The opinion is often held, that children should have little animal food; "meat is not good for little boys and girls," is a very common answer to children. While the stomach of a very young child has not the muscular power to triturate this kind of food, the same objection does not tell against the use of it by those who are a little older. The opinion of science is exactly the opposite of the popular opinion on this question. Each day the body of a man undergoes a certain wear and tear—wear through muscular exertion, wear of the nervous system, wear of viscera in carrying on the functions of life, and this waste has to be renewed. Every day, by radiation his body loses heat, and as the temperature must be maintained, this loss must be compensated by the constant production of heat. The man has simply to maintain his equilibrium. The boy also wastes his tissues by action; he loses heat by radiation, and as his body exposes a greater surface in proportion to its mass than does that of an adult, and loses heat faster, he requires proportionally more calorific food than a grown person. Even if the boy had no more vital processes to carry on than the man, he needs, in proportion to his size, more nutriment. But, in addition, the boy has to grow, or in other words, make new tissue. After providing for all the other needs, the surplus nutriment is wanted to build up the frame, and only by this surplus is normal growth possible. Any growth taking

place in the absence of such surplus, causes a manifest prostration, consequent upon deficient repair.

Admitting, as we must, this relatively greater need for nutriment, the question is, how shall we meet it, by giving a large quantity of light food, or a smaller amount of concentrated food? Shall we meet the needs of the child by giving a sufficient quantity of food as good as that of adults, or tax the stomach with a larger quantity of inferior nutriment? The more we save from the labor of digestion, the more energy we leave for purposes of growth and action. The function of nutrition cannot proceed without a large supply of blood and nervous-power, and the more nutritious and the better adapted the food is for assimilation, the less extra energy will be taken away from the general fund. Not only the size but the energy of a child depend in great measure on its food, and as that is stronger and more nourishing, so will he be more capable of exertion and endurance. The well known fact of the superior powers of the English navvy to perform hard labor, has long been recognized, but, as stated in Flint's Physiology, this has been shown to turn upon difference of diet and not of race. It has been proved by actual experience that continental navvies, fed in the same way as the English ones, are capable of the same amount of labor. The food of the child should contain fresh meat, vegetables and fruit, and the aim of supplying the nutritive needs of the growing economy by a highly nourishing and somewhat concentrated food, so prepared as to be easily digested, must be kept steadily in view.

Parents often make the mistake of allowing too much sameness in the food of their children. The natural repugnance to a long continuance of one kind of food is a normal incentive to that diversity which is a physiological need of the system. There is no one food, no matter how good, which supplies *all* the requirements of nutrition. The enjoyment of a change of diet is a nervous stimulus, which increases the action of the heart, and by propelling the blood with more vigor, assists digestion. This is practically so well known that every intelligent farmer understands the importance of varying the food of his cattle. Not only should there be variety from time to time, but at *each* meal. The experiments of Goss and Stark (Cyc. Anat. and Physiology), "afford the most decisive proof of the advantage, or rather the necessity of a mixture of substances in order to produce the compound which is the best adapted for the action of the stomach." It may perhaps be necessary to remark that children who have been accustomed to too low a diet, or one made up of innutritious substances in large amount, should not be put on a full regimen too suddenly, as they would suffer from the unaccustomed change. Neither should the concentration be carried too far; a mixed diet, vegetable and animal, will best fulfill all indications.

The strange antagonism to the guidance furnished by the sensations of children, again peeps out in the tendency to clothe them too lightly. The common notion of hardening is a melancholy error. The writer has seen death follow the well-meant attempts of parents to carry out this system, and has witnessed the terrible remorse of a father, who is firmly convinced that he was himself the cause of the early death of his only son. Those who survive carry the marks of their suffering either in growth or constitution. When the constitution is sound enough to stand it, exposure produces hardness, but at the expense of growth. The Shetland pony is tough but a dwarf, and the Laplander and Esquimaux are stunted. This is most easily explained. As we stated before, in order to compensate for the cooling by radiation which the body is ever undergoing, there is an oxidation of certain matters forming part of the food. In proportion as the loss of heat is great, must the quantity of these matters for oxidation be increased. All the energies being drawn upon to maintain the bodily temperature less material is left to build up the frame. This shows the true importance of clothing. Liebig says: "Our clothing is, in reference to the temperature of the body, merely an equivalent for a certain amount of food." By lessening the loss of heat, it lessens the amount of fuel needed to keep up that heat; and the stomach can do more in preparing other materials. Here again the farmers have found out that cattle are fattened on less food in a warm stall, than if the temperature is low, and govern themselves accordingly. In proportion to their smallness and the rapidity of their growth, do children suffer the greatest injury from cold. Quetelet has pointed out, "that in Belgium two infants die in January for one that dies in July." We have before stated that the child exposes more surface in proportion to its bulk than the man, and loses relatively more heat. Lehman says: "If the carbonic acid excreted by young children or animals is calculated for an equal bodily weight, it results that children produce nearly twice as much acid as adults." This is a fair indication of the amount of heat produced. And we see that in children the system has naturally to provide nearly double the proportion for generating heat. *Every ounce* of nourishment needlessly wasted to keep up the temperature, is stolen from the nourishment of the frame, and the child, with lowered vitality, is peculiarly liable to attacks of disease, and has not the power to rally from them. Dr. Combe gives us the true principle in the following words: "The rule is, therefore, not to dress in an invariable way in all cases, but to put on clothing in kind and quantity *sufficient, in the individual case, to protect the body effectually from an abiding sensation of cold, however slight.*" Fashion, which dresses children to please the eye, and changes the ordinary woolen dress for a white one to go out visiting, has, with the aid of the bleak winds of our coast, sent many a little

one to Heaven; and perhaps, in its eventualities, the fact that many more have survived, with impaired vigor and weakened forces, mental as well as bodily, to transmit in their turn these failings to their children, is still more sad to contemplate. The clothing of children should never be in such excess as to prove oppressive, but it should always be enough to prevent any general feeling of cold; it should be a good non-conductor, as woolen, strong enough to stand hard play, and its colors such as will not suffer from use and exposure.

Most persons are aware of the importance of bodily exercise for children, yet still they are not generally allowed full scope for the exercise of their energies in this direction. Especially in our cities children are kept at home; it is not genteel to play in the streets; and then they will soil their clothes! While boys manage to get a tolerable amount of exercise, our girls are fettered on every side. Girls must not be allowed to run wild; they will be as rude as boys, and grow up romps, say the defenders of maiden propriety. This fear is needless; the sportive activity of boys does not keep them from growing up into gentlemen. Why should it prevent girls from becoming ladies? Youths often show a ludicrous anxiety to avoid whatever is not manly. It is notorious that English girls are less forward, remain children longer than ours do, and they are certainly modest and reserved enough when they grow up; yet they habitually take an amount of exercise such as our girls never dream of, and are allowed to follow their natural inclinations for juvenile sports. The robust form of the young English lady who walks ten miles for pleasure, and does not suffer from exposure to the inclemency of the weather, is a commentary on the wisdom of their early training.

Gymnastics have been brought in to supplement that natural play which all children seek if allowed to. That this is better than nothing, we admit; but that it is an adequate substitute for play, we deny. These formal muscular actions are less varied than those accompanying juvenile sports, do not secure so equal a distribution of action to all parts of the body; this produces fatigue sooner, and leads to disproportionate development. Gymnastics are inferior in the *quantity* and also in the *quality* of muscular exertion which they secure. They are monotonous, while sports produce exhilaration which has a highly invigorating influence. Happiness is the most powerful of tonics; it tends alike to increase health when it exists, and to restore it when it has been lost.

A topic remains, perhaps demanding more consideration than any of the foregoing. Are the younger adults, and those verging upon maturity, among the educated classes, as strong and as well grown as their seniors? As measured by ancient armor, modern men are proved to be larger than ancient men. The tables of mortality show rather an increase in the duration of life; and yet

omitting the laboring classes, it will be found that in a majority of cases children do not reach the stature of their parents; and in massiveness, making due allowance for difference of age, there is the same inferiority. In health the contrast is even greater. Men of past generations, living riotously, could bear more than men of the present generation who live soberly. The annals of the bench and bar show that our recent ancestors were capable of prolonged application without injury, even to very old age. Yet paying more attention to the laws of health, we are continually breaking down under our work. What does this mean? Is it that the past over-feeding, of adults and juveniles, was less injurious than the under-feeding we have spoken of? Is deficient clothing to blame? Is discouragement of juvenile sports, in deference to a false refinement, the cause? Each of these probably has had a share in producing the evil; but another detrimental influence is at work, perhaps more potent than any of the others, except mental application.

The pressure of modern life continually increases the strain on old and young. In all professions and business pursuits, intense competition taxes the abilities and energies of every grown person. In order to fit the young to maintain their place under the competition, they are subjected to more severe discipline than before. Fathers, hard pressed by competitors, have to keep up a more expensive style of living; and, always at work, get little exercise, and few holidays. Their constitutions, broken by over application, they transmit to their children, and these comparatively feeble children, predisposed to break down, are required to go over a more extended course of study than their stronger predecessors. The disastrous effects of this cumulative transgression can be foretold, and every one sees the results. Cases of children or youths of either sex, more or less injured by undue study, frequently come under our notice. Here a child has to leave school; again, you find chronic congestion of the brain. One has a fever, or another is subject to fainting fits. These troubles become hereditary, and the children of parents who have been affected by such complaints, inherit an enfeebled brain, and are frequently unable to bear even a moderate amount of study without headache or vertigo. Indigestion, constipation, cold extremities, palpitation, impaired vision, checked growth, and lax tissue, are only a few of the evils entailed. If sufferings so conspicuous are frequent, how general must be lesser injuries. For one case where well marked injuries are traceable to overwork, there are many cases where the evil is unobstrusive and slowly accumulating, cases of derangement of function attributed to anything but the right cause, cases of retardation and arrest of bodily growth, where a tendency to consumption is induced; most common of all perhaps the predisposition to cerebral disease, which strikes down so many among our overworked upper classes.

When we see the frequent ailments of overworked professional and mercantile men, and how constitutions are undermined by these causes, think upon the sad effects which undue application must produce upon the undeveloped systems of children and young persons. The young are not competent to bear as much hardship or physical exertion, nor as much mental exertion as grown persons. If the full grown suffer so manifestly from the mental exertion required of them, what must be the damage which a mental exertion, often equally excessive, inflicts upon the young? Does not every professional man know how common slight curvature of the spine is among girls, and that this is frequently due to debility? Most parents seem to know the bad effects that follow infant precocity, yet it appears not to be perceived that throughout the whole time of growth a forced developing of intelligence will entail evil results. There is a natural order and a natural rate at which the faculties unfold. If these faculties are overtaxed, the result will be some form of evil. Let it never be forgotten how many demands there are upon the system of the child—repair of muscular tissue, repair of brain and nervous tissue, supply of heat, performance of digestion, growth; we can overstimulate the brain only at the expense of all the other functions, for the amount of vital energy which the body possesses is limited, it is impossible to get more than a certain amount of power. Says a distinguished writer, "It is a physiological law, first pointed out by M. Isidore St. Hiliare, and to which attention has been drawn by Mr. Lewes in his essay on *Dwarfs and Giants*, that there is an antagonism between *growth* and *development*. By growth, as used in this antithetical sense, is to be understood *increase of size;* by development, *increase of structure*, and the law is, that great activity in either of these processes involves retardation or arrest of the other." "Now this law is true, not only of the organism as a whole, but of each separate part. The abnormally rapid advance of any part in respect of structure involves premature arrest of its growth; and this happens with the organ of the mind as certainly as with any other organ. The brain, which, during early years, is relatively larger in mass but imperfect in structure, will, if required to perform its functions with undue activity, undergo a structural advance greater than is appropriate to the age; but the ultimate effect will be a falling short of the size and power that would else have been attained." "And this is a part cause—probably the chief cause—why precocious children, and youths who, up to a certain time, were carrying all before them, so often stop short and disappoint the high hopes of their parents." Prolonged exertion of the brain, then, and undue mental excitement in children and youths, will surely entail accumulating degeneracy of physique. The effects must be bad when a weakened stomach supplies the growing body with blood deficient in quantity and poor in quality,

while a weakened heart fails to propel this vitiated current at the normal rate. This system is a mistake, no matter how you regard it. If the mind is plied with facts faster than they can be grasped, they fall out of recollection. It makes study distasteful, and causes an aversion to all books and information in after life, thus defeating its own end.

Acquisition of knowledge is not everything; it is the organization of knowledge we want. Spencer remarks, "It is not the knowledge stored up as intellectual fat which is of value; but that which is turned into intellectual muscle." But its worst feature is that it destroys that physical vigor necessary to make intellectual training useful in the competition of life. Success depends more on energy than upon information by itself. Strong will, and that untiring activity which comes from abundant animal vigor, will gain a victory over competitors enfeebled by over study. Even supposing wordly success attained, the ill health accompanying this system will be a perpetual curse.

On women this system produces even worse results than on men. Men care little for learned women, but they do care for physical beauty, sense, and good spirits. Rosy cheeks, laughing eyes, and a fine figure, gentleness, and good breeding, will carry the day over all the refinements of school lore. As Mr. Zulliver says, "An over cute woman is no better nor a long tailed sheep. She'll fetch none the bigger price for that." Wisely and well it is so ordered, let us remember, that nature's chief end is the welfare of posterity, and so far as that is concerned, mere culture accompanied by a bad physique, is worthless, the descendants of such parents will die out in one or two generations. A good physique is worth preserving, even with poor mental endowments, for throughout future generations the mind may be developed. The system which would overload a girl's memory at the expense of her constitution, is fatal. Educate by all means, and as highly as is compatible with the general health and function of growth. Were the cramming system less pursued, and the system of self-education and reasoning more developed, a high grade of culture might be reached. The pupil would have sufficient interest in her studies to prosecute them when the restraints of tuition are removed, there would be something to fill the blank between the school room and married life. But so to educate as to produce physical degeneracy, is to defeat the very end for which all this toil, expense and solicitude are undergone. This high-pressure system applied to girls, often ruins their prospects for life; besides inflicting on them bad health, with its pains and disabilities, and consequent exacerbation of temper, it very often actually consigns them to celibacy.

Dr. Nathan Allen, of Lowell, brings one part of this subject very forcibly before us. He has studied the subject statistically, and has discovered that the average number of children to Ameri-

can families in New England is but 3 or $3\frac{1}{2}$, against an average of 8 to families of a corresponding social scale a century ago. Population can hardly be kept up among the educated classes, unless an average of more than three children are born to a family. This, then, is the great problem of the future. Historians long debated the question, what was the reason for the decline of Greece and Rome. Prof. Seelye, the eloquent author of "Ecce Homo," has answered this question: "Rome died for want of men." The human harvest was bad. Dr. Allen has shown that, in all probability, Greece died from the same cause as Rome. Practitioners in New York and its vicinity state the same facts. The editor of the *N. Y. Medical Record*, very truly says: "A nation can do without high culture; it can do without extensive territory; it can do for a time without religion; it can, like China, do without a pure morality, *but human beings it must have.* Questions of science, of education, of government, of religion, of morality, etc., are trifles compared with this one great question of population. The time must come when physicians will evince a disposition to employ a portion of their leisure in studying the great laws of population."

The general conclusions to be derived from what we have stated are, that the ordinary treatment of children is often injudicious. Their food is deficient in quantity or quality, or both; they are not properly clothed; they do not have sufficient exercise, more particularly the girls, and the mind is overworked at the expense of the body. We tax the young organism too much, and give it too little. Through infancy, childhood and youth, growth is the requirement to which everything else should be subordinate. The mental and physical activities should be increased gradually only as the rate of growth diminishes. Herbert Spencer, to whose writings we are greatly indebted, remarks: "We do not yet sufficiently realize the truth that as, in this life of ours, the physical underlies the mental, the mental must not be developed at the expense of the physical." All neglect of the laws which conserve or promote health is *physical sin.* When the preservation of health is looked upon as one of our most important *duties to ourselves and others*, the physical training of the young will be understood better, and will receive that attention which it imperatively demands.—*Western Lancet.*

Dr. Ricord on Syphilis. (Meeting of the British Medical Association at Birmingham, August, 1872.)

Dr. Ricord, after acknowledging the reception which had been accorded him, said he had not prepared an address, as he had not come with the intention of speaking; but Mr. Acton had caught him and obliged him to speak, which was a trick. (Laughter.)

He had come to listen and to learn, but not to teach. However, he must say something, though there was no necessity for him to say much, as Mr. Acton had so nearly stated his views and his mode of treatment that there was very little for him to add. There was one great question in regard to syphilis, and it was this: could it be cured radically? In former times all venereal affections, no matter what, were considered as belonging to syphilis, and certainly there was then an immense number of radical cures by mercury or any other means. In this way swellings of the glands, soft chancres, even warts, and other things not belonging to syphilis, were easily enough cured, radically cured; and there were no after-consequences, no secondary symptoms. This explanation would account for the immensely large number of cases of (reputed) syphilis which used to be radically cured. But, since syphilis had been correctly diagnosed, the inquiry to which he had devoted a large part of his life was to see what belonged to syphilis, and what resembled it without belonging to it. There had been great differences in the results of treatment—so much so that a doubt, as Mr. Acton had said, had arisen whether real syphilis could be cured. That doubt as to the curability of syphilis was not recent; it was a doubt which old authors had expressed; and one particularly, with a curious name, which they would probably remember—"Mercurialis"—thought that now and then an armistice might probably be made with syphilis, but that there was no real cure. In fact, they frequently saw that a long time—months, years—after the symptoms had been treated, new symptoms appeared. And so the doubt whether syphilis could be radically cured, or whether the cure was only temporary, with a prospect of the symptoms returning, might still remain; he (Ricord), however, had established the law of the unicity of the diathesis of syphilis. The law of syphilis was the same as the law of small-pox, cow-pox, or measles. A man could have but one attack so long as the disease remained in the constitution—that was to say, according to his opinion a new attack could not take place while the system was still under the influence of the old diathesis. Well, it was exactly so with syphilis; as long as a patient was laboring under the diathesis of syphilis, another *infection* of syphilis could not occur—it was impossible. For instance, after indurated chancre, and the appearance of secondary symptoms, it was not possible for the patient to contract a new indurated chancre, with swelling of the glands, manifestation of skin disease, and so on. After one attack the patient could not have another infection as long as the influence of the first remained in his body; a second contagion could not take possession of the system at the same time. If, perchance, something of the kind took place, the symptoms would not follow the regular evolution. So, when a patient had constitutional syphilis, if a new chancre appeared to be hardened they would not find the glands swell, or

the early manifestation of skin disease appear; and so of other symptoms. Superficial ulceration might take place, just as a spurious form of vaccination might arise on one who was still under the vaccine influence; but it was not a true case, it was not attended with the sequelæ. But if the constitutional disease were cured, if the syphilitic disposition were completely eradicated, then the patient would be able to contract a fresh indurated chancre, with all the subsequent symptoms. If this were the case—and he had observed it with great care, his experience dating back forty years—it proved that syphilis could be cured; and if syphilis could be eradicated, to ascertain whether a patient was cured or not when all the symptoms had disappeared there would be nothing else to do (though he knew that could not be done) but to try inoculation from an indurated chancre. If vaccination did not take, they were sure the vaccine disposition continued; if it did not continue, vaccination could take effect. In regard to syphilis, the proof had not been carried to this extent; but he had been able to observe that as long as the syphilitic influence continued, a patient could not contract an indurated chancre anew, and that, consequently, if cured, a new infection might take place. This was a great point gained in science, and it proved what he had said, that syphilis could be radically cured. Now, as to the treatment of the disease. As he had told them, Mr. Acton's ideas were completely his ideas, explaining his manner of treatment and his practice. He would first speak of the treatment of the first stage—that was to say, the primary sore. As soon as he had ascertained that there was a hardened chancre, with a swelling of the glands—not inflammatory, because the glands in this case never suppurated—he immediately instituted the mercurial treatment. There was one point on which there was some difference of opinion: many believed that it was impossible to prevent the accession of the secondary symptoms, the first manifestation of constitutional disease; many thought that no matter what treatment was employed the sequelæ would appear. Well, he had ascertained that if the treatment were soon begun and well carried through, the bursting out of the first secondary symptoms, the roseola, the swelling of the glands of the neck, etc., might be prevented. If this were not frequently the case it was because the treatment was resorted to too late, when the disease had had time to take root, and secondary symptoms were about to show themselves. In such cases it was not astonishing that secondary symptoms should appear, and the treatment ought not to be blamed; if the treatment were steadily continued they soon disappeared. But if the treatment were begun early, the observation of forty years gave him the assurance that secondary symptoms would not appear. When secondary symptoms had appeared, the best treatment was, as Mr. Acton had said, mercury. If they wished for a perfect cure, this treatment must be continued. In general it was not per-

sisted in long enough; it was dropped as soon as the symptoms disappeared, or a short time after, and then it was not astonishing to see them reappear. But if the treatment were continued five or six months, having regard at the same time to sustaining the constitution in general, relapses would be found to be infrequent. He observed very few cases of relapse, and there would not be many when the treatment was well kept up—when the patient had patience enough, and the physician sufficient courage. After six months of that treatment and no symptoms reappearing, then the treatment with iodine must be begun, and continued for five or six months more. When a patient went to him, he said, "You will have a year's treatment—do you consent to that?" "Yes." "Very well; we will go on. If not, good bye." There were cases in which syphilis occurred in a healthy person—the only disease was syphilis. Then treatment was very easy—the case was a simple one; they had but one enemy to fight—all went on regularly. But, unhappily, in many instances syphilis was not alone; there was something else —scrofula, skin disease, scurvy, low constitution, poorness of the blood. They must understand that such complications as these altered the case; the treatment did not act so powerfully as it would do in the first case, as many of these complications were aggravated by the treatment. For instance, syphilis and scurvy might coexist —and the characteristic of the latter was poorness of the blood, while that of the former was a plastic condition of the blood. Here, therefore, was a counteracting influence to the treatment for syphilis. Now one thing must be known. Perhaps he was speaking too long? (No; go on.) Well, in many instances syphilis became the secondary consideration, and they must begin with the constitution of the patient, as debility was the disease that required first treatment. They must attack the strongest enemy first. Syphilis was sometimes quiet, and stopped and waited till they came to it. So, when they had improved the constitution, they might commence with the treatment, and they must begin by treating the constitutional complication. The best treatment was the proto-ioduret of mercury. The stomach bore this well in general. Sometimes it gave rise to a little diarrhœa, which was an easy thing to moderate; but when the stomach was not tolerant of the remedy, one capital treatment was that which Mr. Acton had told them he had confidence in—namely, rubbing-in. If this were not an unpleasant and disagreeable operation, certainly it would be in general about the best; he himself should prefer it. In rubbing-in, the action of the remedy was powerful and quick, and the stomach was not at all troubled with it. If it were not so disagreeable, and were a thing that could be done without being noticed, he should give it the preference. However, there were cases in which the skin was otherwise affected, in which there was a skin disease, and then friction could not be used. In a case of complication of syphilis and

herpes rubbing-in could not be resorted to. In general, patients bore the iodide of potassium well, and in large doses. For his own part he frequently employed forty, sixty, eighty, even a hundred grains a day, and more. They must bear in mind that if they gave too small doses to some patients they would have no result; it was a remedy that passed through the body with great rapidity. He had had great experience of it, and he had found that in half an hour it had passed away in the urine. Iodide of potassium was a sort of broom of the blood. So they saw that the methodical treatment was this: mercury, iodide of potassium. But only one for the first stage, and only the other for the later stage of syphilis. No, the rule was absolute that as long as there were secondary symptoms well marked, mercury must be given; when there was a mixture of secondary and tertiary symptoms, mercury and iodide; for tertiary symptoms, iodide. To treat some patients with iodide would not advance them in any way. Why? Because there was frequently in the constitution, in the blood, something of the second stage, something that required the mercurial treatment. This might not show itself, but when iodide of potassium ceased to do good, the disease remaining stationary, let them go back to mercury again, and they would have a splendid result where they had thought there was no further possibility of curing the patient. This was what Mr. Acton had said, and he was completely and absolutely of Mr. Acton's opinion. But there was another thing. When syphilis had lasted for a long time, and had had a great effect on the constitution, it in some way disappeared, and left the patient with a complication existing that was not existing before. Sometimes a long course of treatment brought on a new disease—wasting of the constitution, poorness of blood. They must then stop all the specific treatment, and, applying themselves to the principal symptom, restore the constitution by preparations of iron, bark, tonics, and proper food, so bringing the patient back to the possibility of undergoing anew a regular methodical treatment, either by mercury or iodide, or a combination of these two remedies. In former times, when a person was thought to be syphilitic, physicians seemed unable to entertain any other idea than that of syphilis, and acted exclusively against a specific disease, neglected everything else, and in that way they experienced all the bad effects and accidental symptoms which a bad administration of the symptoms would produce. Mr. Acton had spoken of the use of bromide of potassium. His views were exactly the same as Mr. Acton's with respect to the use of the remedies at different stages, the necessity of having regard to the complications that might exist, and of dropping the treatment for awhile till the constitution was restored. This was regular and methodical, and his own manner of practice. But now, was bromide of potassium an anti-syphilitic remedy? He did not be-

lieve that it was. He might be mistaken; but he had experimented with it in syphilitic symptoms, and without any apparent result. But it was a splendid remedy in complications of syphilis. In some cases of symptoms referable to the nervous centres, bromide of potassium was an adjunct, and came to the help of mercury or the treatment by iodine. In some cases of brain disease with syphilis, and of disease of the spine or epilepsy, bromide of potassium did wonders. So that they would see it was a remedy to be applied in nervous complications that might occur, but they must not depend on it as an anti-syphilitic remedy. Now, there were symptoms following syphilis which were not syphilitic, and these must not be treated with mercury or iodide of potassium. For instance, there might be necrosis. Well, they could not bring a dead bone back to life, no matter what quantity of mercury or iodide of potassium they might give. A physician must know these things, and he (M. Ricord) ought almost to apologize for bringing them forward. It should be observed that specific remedies did not always act specifically. Certainly, there was no specific effect without a specific cause, but specific causes did not always act specifically. So there were some effects of syphilis, such as disease of the bones, that would afterwards act as a common irritant. In syphilis there might be an ulcerated bone in the nose or mouth, bringing on suppuration; mercury or potassium would not remove that, but let the diseased bone be removed, and the patient was frequently cured. They must take note of all these conditions—the nature of syphilis, the manner in which it conducted itself, its action on the constitution. Let them particularly take note that the general law of syphilis was the same as the general law of small-pox, vaccine, and measles. If they were sure of this from what he had said and from their own experience, then they might be sure that syphilis could be perfectly, radically cured. They could tell their patients that, and give them courage and hope. If the patient had courage to go through with the treatment, and the physician had courage enough to stick to it, the patient might be radically cured. He thanked them for the reception they had given him; it reminded him a little of his hospital in Paris.

A question was asked whether Dr. Ricord was a believer in salivation.

Dr. Ricord replied—No, surely not. Salivation was an accident following the treatment, and it must be avoided as much as possible. There was but one case in which he approved of salivation, and that was in disease of the eye—iritis. When this occurred, and salivation was brought on, the inflammation of the iris subsided.

Dr. Gross asked whether the soft chancre was capable of contaminating the constitution.

Dr. Ricord said his opinion was that a soft chancre, when ac-

curately diagnosed, never gave rise to constitutional disease. This was a law as absolute as possible. But they must be careful, or errors of diagnosis might be made. It was not always easy to establish the difference between soft and hard chancre, but when the diagnosis was certain, they might be sure they would not have any constitutional disease after the soft chancre. On the contrary, even as long as six months after hard chancre secondary symptoms would appear. This was one of the most clearly established facts in practice. But the hardness of the chancre was not always well marked (*bien formulee*); it might be very superficial in those varieties that were attended with excoriation. When there was a something like parchment at the base, a chancre was very easily taken to be soft, but was not so; and he had had cases sent to him as instances of soft chancre which had been followed by secondary symptoms, but which were well characterized by the parchment-like base. However, there was a symptom of more value than the parchment base, a symptom that was one of the most important witnesses to constitutional affection, and that was the non-inflammation of the glands—they were cold and dull. In general several of them became enlarged; it was very seldom that only one was found to swell after hardened chancre; and not only were the glands swollen but the enlargement frequently occurred on both sides, in both groins. The enlargement of the glands was of much value as a characteristic of hardened chancre. The enlarged glands appeared very early, even during the first fortnight of the existence of the sore. With the soft chancre the glands did not always swell; in a great many cases there was no swelling. They would never find a real hard chancre without swelling of the glands; and they would also find many cases of soft chancre with swelling, these cases depending upon surgeons confounding the hard chancre with thickening dependent upon inflammatory infiltration of the tissue immediately around the sore. But if the glands should swell after soft chancre, it was probable that suppuration would come on. With hard chancre there was no inflammation and no suppuration. The older writers directed their efforts to cause an indurated sore to suppurate, in the belief arising from the practical observation that when a bubo suppurated there was no constitutional disease, and therefore they were under the belief that the poison was thrown out of the body. In their quaint way of putting the fact, "they did not like to shut up the wolf within the fold." But they could not bring on specific suppuration in the case of indurated glands; it was impossible. He had tried all means of doing it, and could not succeed in the cases of specific suppuration. In the instance of soft chancre what had they to do—await the occurrence of suppuration, which might either be attended by simply inflammatory or specific bubo? With the soft chancre the inflammatory bubo appeared sometimes

two, three, or four weeks after the occurrence of the chancre, and it had the characteristic pus of the soft chancre. There was such a difference between hard and soft chancre that it was difficult to make a mistake. When a patient consulted him (M. Ricord) suffering from soft chancre, he said to him, "Be quiet; you may have a bubo; that will suppurate, but your constitution will be unaffected; you will not be liable to secondary symptoms." With a hard chancre he could predict indurated glands, attended by constitutional symptoms, within six months, provided proper treatment were not followed. He would add, that when it was decided that the case was one of hard chancre or soft chancre, the treatment was very simple. When there was a doubt as to the nature of the chancre, he waited till some characteristic symptom arose. But there were cases in which the existence of a soft chancre did not prevent a patient from contracting a hard chancre. The patient might have the two species at the same time, contracted from different sources. The two species, hard and soft chancres, do not depend upon the difference in the ground, but on a difference in the seed (*contagium*). So that the new comer who had relations with a woman suffering from the two species could take his choice. If the patient had a true indurated chancre and well diagnosed secondary symptoms, he might catch the soft chancre as often as he pleased, and it would be unattended with specific constitutional disturbance.*

Mr. Lord (London) asked Dr. Ricord what was his experience of municipal interference in respect to contagious diseases in Paris, and what was his opinion as to the effect of such interference in promoting immorality and degrading the character.

Dr. Ricord said it was surely a good thing to have the women examined. It made the disease less frequent—no doubt of it. From what had already been done in France he saw that the same practice would be beneficial here. It was already a great thing that English sailors no longer brought the disease into France; the French would take care it did not return back into England, and that was a free exchange.

The Chairman announced that the Council had resolved to make Dr. Ricord, Dr. Demarquay, and Professor Gross honorary members of the Association.—*London Lancet.*

* Dr. Ricord has established a law on which he sets great value, and for the verification of which he thinks the present and future generations will owe him a debt of gratitude. It is that of having discovered and described the UNICITY of the syphilitic diathesis—in fact, subjecting syphilis to the LAW which is common to small-pox, cow-pox, measles, etc.—ED. L.

Dropsy of the Amnios—Operation, Recovery. By J. W. B. Reynolds, M.D., Sacramento.

On the third of July I was requested to visit Mrs. S., twenty miles distant. She was about thirty-six years of age, of small stature, and the mother of seven children. On inquiry I found she was about five months advanced in pregnancy, but the enlargement of the abdomen was as great as common at the end of seven months. On percussion I found the flat sound of water, but I was at a loss to determine whether the fluid was in an ovarian sac, intraperitoneal, or in the uterus. As she had no appetite, the liver torpid, and kidneys deficient in their secretion, I thought it best to put her on a course of alteratives and diuretics, hoping the improvement in the general health anticipated from this course might arrest the abnormal secretion and keep it in check till the end of her gestation. The general health was much improved by the remedies used, but on the eleventh I was called again to visit her. I now diagnosed dropsy of the amnios. She had enlarged rapidly since my last visit: she was unable to sleep, and was suffering a great deal from pain in the right side and between the shoulders. By means of hot fomentations, painting the abdomen with iodine, and anodynes internally, she passed the time in rather less suffering till the evening of the twenty-first, when I was again sent for. After riding nearly all night to get to the residence of my patient, I found her sitting bolt upright in the bed, in which position she had been for five days and nights—in fact, she could not even lie down to sleep, saying she felt as though she would suffocate whenever she attempted it. She was greatly emaciated, and the abdomen was so full and tense that the respiration seemed almost suspended, and there seemed little hope of the poor woman being able to stand it many more hours without some relief. I had informed the husband several days previously what would probably have to be done, and as she had been made aware of it, she was urgent for the operation.

Accordingly I proceeded at once to attempt the dilatation of the os uteri by the gradual, but pretty forcible, insertion of the index finger. Then applying the extract of belladonna pretty freely within the cervical canal—applying a tampon and administering the fluid extract of ergot twice—about two-thirds of a drachm at a time, one hour apart, I had the pleasure of finding, upon examination, that the os was dilated as large as a quarter of a dollar. By encouraging her now with the hope of almost immediate relief, I prevailed on her to lie down until I could introduce the instrument to cut the membranes. I used a blunt-pointed pair of scissors, curved on the flat, guiding them through the vagina and into the uterus on my finger. They answered my purpose admirably, and I found no difficulty in cutting the membrane which

contained the fluid. There was upwards of thirty-two pints of fluid, resembling the liquor amnii, discharged. My patient was asleep before it was half discharged; and after sleeping comfortably for an hour, labor pains commenced, and in about one hour more she gave birth to the child, which was nearly six months grown. It gave a slight cry, a gasp or two, and expired. The secundines were easily removed. But in removing the placenta, I felt a tumor nearly as large as the fist attached to it. When I removed it where I could examine it, I found the tumor filled with semi-coagulated blood, about four ounces in quantity. It was enclosed within a membranous sac which appeared to be formed by a portion of that part of the amnios which is reflected over the internal face of the placenta. Whether this unnatural formation had anything to do with the abnormal secretion, I am unable to say. Indeed, it may have been of recent formation.

Cazeaux, in his *Midwifery and Diseases of Pregnancy*, mentions a case from Duclos, of which this was an almost exact counterpart; the rapid emaciation, the great distension of the womb, producing such enormous enlargement of the abdomen, that there was absolutely no room for the play of the diaphragm. She could not even bear any support, saying that the least compression on the back or chest stopped her breathing. So the poor woman sat for five days and nights without support, and almost without sleep or food. As Cazeaux says, diuretics had no effect on the progress of the disease. I had no suitable means to puncture the membranes, and I thought it best to have the os well dilated before operating. Cazeaux says, "If the neck were obliterated, it might become necessary to make a puncture by the vagina near the uterine orifice," and that Camper and Scarpa even advise puncturing between the umbilicus and pubes. I must confess that I cannot conceive of conditions which would render such a proceeding necessary. If he had said, "if the os were entirely obliterated," I could understand the necessity of making a new opening; but where the neck is obliterated, as in the last months of pregnancy, I think the os would only be the more easily dilated. And my success in this case gives me confidence to believe that I could succeed in almost any other without puncturing, and unless the os were comp etely closed by firm adhesion. This lady had passed an unusual quantity of liquor amnii at her last confinement two years previously, but the quantity had never been so great as to cause any inconvenience during gestation. She recovered her health rapidly after the operation.—*Pacific M. & S. Jour.*

TABULAR STATEMENT of 22866 Vaccinations and Re-Vaccinations at different periods of life, in which the results were carefully observed and recorded by Physicians of the Relief and Aid Society, during the winter of 1871-2. The number of cases of Small-Pox occurring after successful and unsuccessful Vaccinations are also shown.

SUCCESSFUL VACCINATIONS.

NATIONALITY.	Under 5 yrs.			Small-Pox.			5 to 10 yrs.			Small-Pox.			10 to 20 yrs.			Small-Pox.			20 yrs. & upward.			Small-Pox.		
	1st	2d	3d	1st	2d	3d	1st	2d	3d	1st	2d	3d	1st	2d	3d	1st	2d	3d	1st	2d	3d	1st	2d	3d
American	250	59	6	3	2	....	61	114	6	2	1	....	50	167	34	3	6	1	53	236	102	7	5	2
German	399	148	18	3	....	2	95	353	26	6	3	1	51	434	82	2	6	1	77	1144	304	18	45	21
Irish	1007	282	47	7	1	4	233	691	119	2	4	4	131	840	266	7	17	12	239	1381	322	45	147	38
German-American	386	191	13	4	....	....	63	366	29	2	16	1	40	377	41	10	30	2	3	26	5	1	1	1
Irish-American	225	153	2	1	2	....	42	306	22	1	9	....	14	395	66	5	26	4	5	39	11	4	9	2
Colored-American	54	4	2	....	....	....	26	15	....	....	....	....	8	23	3	....	1	....	24	55	9	6	....	1
Swedish	158	31	5	3	....	....	67	79	12	1	2	....	31	106	20	4	2	1	55	202	87	9	11	2
Norwegian	139	19	3	....	....	....	54	80	10	1	....	....	33	90	21	1	....	....	41	132	82	2	7	4
English	98	20	1	1	....	....	28	53	1	....	....	....	12	64	17	....	3	1	25	87	30	9	13	2
French	41	9	....	4	....	....	8	24	2	....	....	....	1	22	7	....	2	....	8	26	8	2	1	....
Scotch	25	12	....	....	....	....	15	18	3	....	....	....	5	23	6	....	1	....	6	32	7	2	2	....
Scandinavian	31	29	....	....	....	....	....	25	5	....	....	....	1	31	2	....	....	....	....	55	6	....	1	....
Italian	38	10	....	....	....	....	6	24	....	....	....	....	3	36	3	....	....	....	7	42	6	2	3	1
Canadian	16	9	2	....	1	....	6	23	3	....	....	....	....	29	9	....	....	....	1	35	9	....	3	....
Bohemian	22	7	....	....	....	....	6	31	....	....	....	....	....	17	1	....	....	....	4	50	2	....	....	....
Prussian	7	1	....	....	....	....	2	2	3	....	....	....	1	7	1	....	....	....	5	5	....	....	2	....
Danish	11	....	....	....	....	....	4	3	1	....	....	....	4	3	....	....	....	....	8	3	5	....	....	....
Belgian	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....
Holland	5	3	1	....	....	....	1	7	....	....	....	....	....	4	1	....	....	....	....	8	2	....	....	....
Denmark	2	3	....	....	....	....	....	2	....	....	....	....	....	1	....	....	....	....	....	27	1	....	1	....
Russian	2	2	12	....	....	....	12	....	8	....	....	....	8	4	4	....	....	....	24	4	22	....	....	....
Jews	7	1	....	....	....	....	1	3	....	....	....	....	1	4	1	....	....	....	1	8	....	....	....	....
Miscellaneous	24	6	5	....	....	....	2	17	....	....	....	....	3	20	1	....	....	....	6	27	3	....	4	....
Totals	2948	999	117	26	6	6	732	2226	250	15	37	6	397	2697	586	32	94	22	592	3624	1024	107	355	74

Total successful Vaccination and Re-Vaccination, ... 16202
Total Small-Pox, after successful Vaccination and Re-Vaccination, ... 780

In addition to the above, we have records of 4197 cases which have been excluded, on the ground of incompleteness, from the general statement, and which, if added, would show a total of 27063 cases.

Among the Swedish, in one case, there were three good scars on each arm; still the patient had Small-Pox very bad. (Dr. Strong's Collection.)
Among the English, two cases had Small-Pox, and were afterward successfully Vaccinated. (Dr. Clark's Collection.)
Among the Norwegian, five cases of Small-Pox after successful Vaccination, and one case fatal. (Dr. Clark's Collection.)
Among the Irish, seven cases successfully Vaccinated after they had had Small-Pox, and twelve cases had Small-Pox after successful Vaccination.
Among the American, one case successfully Vaccinated after it had had Small-Pox. (Dr. Clark's Collection.)
Among the Irish, one case of Small-Pox after successful Vaccination, and twenty-one before Vaccination. (H. J. Burlingame.)
Among the German, one case of Small-Pox after 2d unsuccessful Vac., and five before Vac., and three cases after successful Vac. (H. J. Burlingame.)
Among the Swedish, six cases of Small-Pox before Vaccination. (H. J. Burlingame.)
Among the Norwegian, two cases of Small-Pox before successful Vaccination. (H. J. Burlingame.)

UNSUCCESSFUL VACCINATIONS.

NATIONALITY.	Under 5 yrs.			Small-Pox.			5 to 10 yrs.			Small-Pox.			10 to 20 yrs.			Small-Pox.			20 yrs. & upward.			Small-Pox.		
	1st	2d	3d	1st	2d	3d	1st	2d	3d	1st	2d	3d	1st	2d	3d	1st	2d	3d	1st	2d	3d	1st	2d	3d
American	22	37	1	4	4	....	10	56	8	4	....	....	11	59	28	5	....	2	13	118	90	11	11	16
German	40	96	10	....	....	1	18	152	33	6	2	3	5	212	63	....	8	2	30	844	256	18	82	16
Irish	57	145	20	1	4	2	35	286	56	11	3	2	26	316	95	15	9	....	67	749	198	53	127	16
German-American	53	75	2	2	2	....	18	197	17	5	18	....	15	285	33	6	35	1	1	37	9	1	6	2
Irish-American	21	41	3	2	1	....	3	71	10	....	9	....	4	151	23	3	15	1	....	15	7	....	4	....
Colored-American	7	18	....	4	6	....	2	13	2	1	....	1	....	20	11	....	....	....	14	40	24	12	4	....
Swedish	9	26	2	....	....	....	1	39	6	....	1	1	5	47	20	4	5	....	13	103	31	9	11	1
Norwegian	11	8	1	....	....	....	4	13	2	....	....	....	2	14	9	1	....	....	1	43	22	....	2	....
English	7	5	....	....	....	....	1	17	2	....	1	....	2	28	6	1	....	....	5	29	25	1	8	1
French	....	....	1	....	....	....	....	1	....	....	....	....	....	8	1	....	....	....	1	18	9	....	3	1
Scotch	4	6	....	....	....	....	1	9	1	1	....	....	....	5	3	....	1	....	5	25	12	4	4	1
Scandinavian	3	6	1	....	....	....	1	9	2	....	1	....	....	37	3	....	....	3	....	78	8	....	6	....
Italian	2	9	....	....	....	....	....	8	....	....	....	....	2	15	4	....	2	....	3	22	9	1	4	2
Canadian	3	2	....	1	1	....	....	3	2	....	....	....	....	....	1	....	....	....	....	6	5	....	1	....
Bohemian	3	11	....	....	....	....	1	9	1	....	....	....	....	9	7	....	....	....	....	28	3	....	....	....
Prussian	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	....	....	....
Danish	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	1	....	....	....
Belgian	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....
Holland	....	....	....	....	....	....	....	3	2	....	....	....	1	1	....	....	....	....	....	3	....	....	....	....
Denmark	....	3	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	2	....	....	....	....
Russian	10	8	....	1	....	2	2	12	6	....	4	2	4	10	12	....	2	4	2	20	4	....	6	2
Jews	....	2	....	....	....	....	....	1	....	....	....	....	....	....	1	....	....	....	2	3	....	1	....	....
Miscellaneous	1	4	5	....	....	....	1	8	....	....	....	....	....	9	2	....	1	....	1	17	4	1	1	....
Totals	253	503	47	15	18	5	98	907	150	28	39	9	76	1226	324	35	78	13	160	2201	719	112	280	58

Total unsuccessful Vaccination and Re-Vaccination, ... 6664
Total Small Pox after unsuccessful Vaccination and Re-Vaccination, ... 690

Among the Americans, one adult had been several times unsuccessfully Vaccinated, and had Small-Pox. Another case under 5 years was successfully Vaccinated, and at same time had Small-Pox. (Dr. Chas. White's Collection.)

Among the Scandinavians, two successful Vaccinations and Small-Pox occurred in one individual. (Dr. Chas. White's Collection.)

Among the English, one case badly pitted, and second Vaccination successful. (Dr. Chas. White's Collection.)

Among the German-American, one case Small-Pox at 7 years, but a successful Vaccination occurred afterward between 10 and 20 years. (Dr. Chas. White's Collection.)

One case had Small-Pox twice. (Dr. Leonard's Collection.)

Total number of cases of severe Small-Pox, 55. General average time occurring after a successful Vaccination—1st Vaccination, 7 years; 2d Vaccination, 11 5-6 years; 3d Vaccination, 15 3-4 years. (Dr. Bockin's Collection.)

Editors' Book Table.

[NOTE. — All works reviewed in the columns of the CHICAGO MEDICAL JOURNAL may be found in the extensive stock of W. B. KEEN, COOKE & Co., whose catalogue of Medical Books will be sent to any address upon request.]

BOOKS RECEIVED.

Diagrams of the Nerves of the Human Body; Exhibiting their Origin, Divisions and Connections, with their Distribution to the Various Regions of the Cutaneous Surface, and to all the Muscles. By WILLIAM HENRY FLOWER, F.R.C.S., Asst. Surgeon to, and Demonstrator of Anatomy at the Middlesex Hospital. Edited, with Additions, by WILLIAM W. KEEN, M.D., Lecturer on Anatomy and Operative Surgery in the Philadelphia School of Anatomy, etc., etc. Philadelphia: Turner Hamilton, Bookseller & Stationer, 106 S. Tenth St. 1872. 4to.

Dr. Keen has performed a valuable service in reproducing these very excellent diagrams so as to render them accessible to American medical students. We take pleasure in recommending the diagrams to all who desire a competent acquaintance with the anatomical distribution, etc., of the nervous system.

Clinical Lectures on Diseases Peculiar to Women. By LOMBE ATTHILL, M.D., Univ. Dub., Fellow and Examiner in Midwifery, King and Queen's College of Physicians; Vice President Dublin Obstetrical Society, etc., etc. Second Edition, Revised and Enlarged, with Six Lithograph Plates and Wood Cut Illustrations. Philadelphia: Lindsay & Blakiston. 1873. Demy Octavo. Pp. 241. $2.25.

A compact practical manual, which we can conscientiously recommend both to advanced students and general practitioners. It is clear and yet concise, thoroughly scientific and yet practical, as we ought to expect from the clinical teacher. Fortunately, it treats mainly of the more common forms of uterine diseases and their management—exactly what the practitioner most needs. Numerous illustrative cases are cited.

Questions in Surgery. By WM. WARREN GREAVE, M.D., Prof. of Surgery in the Medical School of Maine, etc., etc. Portland: Printed by B. Thurston & Co. 1872.

On the Treatment of Diseases of the Skin: with an Analysis of Eleven Thousand Consecutive Cases. By Dr. McCall Anderson, Professor of Practice of Medicine in Anderson's University; Physician to the Dispensary for Skin Diseases, and to the Cutaneous Wards of the University Hospital, etc., Glasgow. London: McMillan & Co. 1872. Pp. 180. $1.75.

A Practical Treatise on Urinary and Renal Diseases, Including Urinary Deposits. Illustrated by Numerous Cases and Engravings. By William Roberts, M.D., F.R.C.P., London, etc., etc. Second American from the Second Revised and considerably Enlarged London Edition. Philadelphia: Henry C. Lea. 1872. Pp. 616.

The previous edition was noticed in the Medical Journal. The general plan remains unaltered, but all has been carefully revised and important additions made. Several of the old engravings have been replaced by better ones, and twenty new ones have been added. Two valuable articles have been added, on suppression of urine and paroxysmal hæmatinuria.

A Treatise on Diseases of the Nervous System. By William A. Hammond, M.D., Prof. Diseases of the Mind and Nervous System and Clinical Medicine, etc., Bellevue Hospital Medical College; Physician-in-Chief to the New York State Hospital for Diseases of the Nervous System, etc. Forty-eight Illustrations. Third Ed., with Additions and Corrections. ("Est quoddam prodire tenus, si non datur ultra."—*Hor.*) New York: D. Appleton & Co., 549 & 551 Broadway. 1872. Pp. 754.

The Pathology, Diagnosis and Treatment of Diseases of Women, Including the Diagnosis of Pregnancy. By Graily Hewitt, M.D., London, F.R.C.P., Prof. of Midwifery and Diseases of Women, University College, etc., etc. Second American, from the Third London Edition, Revised and Enlarged; with One Hundred and Thirty-two Illustrations. Philadelphia: Lindsay & Blakiston. 1872. Pp. 751. Leather, $6.00; Cloth, $5.00.

A System of Oral Surgery. Being a Consideration of the Diseases and Surgery of the Mouth, Jaws, and Associate Parts. By James E. Garretson, M.D., D.D.S., Aural Surgeon to the Medical Department of the University of Pennsylvania; Author of Diseases and Surgery of the Mouth, Jaws, and Associate Parts, etc., etc. Illustrated with numerous Steel Plates and Wood Cuts. Philadelphia: J. B. Lippincott & Co. 1873. Pp. 1091.

Small-Pox: The Predisposing Conditions and their Preventives, with a Scientific Exposition of Vaccination. By Dr. Carl Both. Second Edition. Boston: Alexander Moon; Lee & Shepard, Boston and New York; Trubner & Co., Paternoster Road, London. 1872. Pp. 82. Stitched, 50 cts.; Cloth, 75 cts.

The Physician's Hand-Book for 1873. By William Elmer, M.D., and Albert D. Elmer, M.D. New York: W. A. Townsend, Publisher. 1873.

The Microscope and Microscopical Technology: a Text Book for Physicians and Students. By Dr. Heinrich Frey, Professor of Medicine in Zurich, Switzerland. Translated from the German and Edited by George R. Cutter, M.D., Clinical Assistant to the New York Eye and Ear Infirmary. Illustrated by 343 Engravings on Wood; and Containing the Price Lists of the Principal Microscope Makers of Europe and America. From the Fourth and last German Edition. New York: William Wood & Co., 27 Great Jones Street. 1872. Pp. 658. Cloth, $6.00.

A complete exposition of the subject. Thoroughly indispensable to the practical microscopist.

Editorial.

"Out of the fullness of the heart the mouth speaketh"—and thus do we wish our readers a "Happy New Year." While thanking them for the liberal support, both intellectual and material, with which they have sustained the Journal throughout the past year, we desire to give them the assurance that the Journal, at the beginning of this its 30th year of life, is only just reaching its period of full maturity and vigor, and is to-day in a better position to repay to its readers all that they may do in its behalf than ever before.

The past year was commenced in ashes and desolation, but with energy and determination: these, as usual, have triumphed; out of the ashes have grown laurels, out of the desolation have come hosts of friends.

The JOURNAL begins its thirtieth volume, with the promise of a more talented and more energetic corps of collaborateurs than before, to whom it can point with pride as representative men up to the front rank in their respective departments of science.

The JOURNAL will continue to be, as heretofore, the organ of no party nor clique, but the independent exponent of truth, whatever be its source. Its pages are open to the free and candid expression of opinion from legitimate sources, and while it will in no case descend to personalities, it will boldly denounce shams and charlatanism, however respectably garbed.

It is intended to be the mouth-piece of Rational Medicine, and the organ of its followers throughout the medical world. H.

Private Retreat for Insane Females.

Andrew McFarland, M.D., so long and favorably known as Superintendent of the Illinois, and other public hospitals for the insane, proposes to supply a want which has long been felt by both practitioners and the public. We commend his circular to general attention.

OAK LAWN — A PRIVATE RETREAT FOR FEMALE PATIENTS AFFLICTED WITH MENTAL AND NERVOUS DISEASES.

This institution has been founded to meet the wants of the large and increasing class of patients for whom the overgrown State institutions of the country afford no proper provision, and whose cases demand quiet and retirement as absolutely essential to successful treatment. Its intent is to make the surroundings of its inmates as nearly as possible those of ordinary domestic life; to afford a *home*, to which the most sensitive may resort without thereby feeling that anything is forfeited of the respect and valuation of friends and associates,—a feeling which constitutes the chief element of dread in a commitment to the ordinary insane asylum.

The site fortunately obtained is admirably adapted for the purpose. It is situated in the suburbs of the city of Jacksonville, Ill., and about one mile nearly due south of the junction depots of the Toledo, Wabash and Western; Chicago and St. Louis; Peoria and Jacksonville; and Jacksonville N. W. and S. E. railroads. The basis of its extensive grounds was a natural forest of oaks, walnuts, elms, and other deciduous trees, now reduced, by many years of labor and study, and a large expenditure for foreign evergreens and exotic shrubbery, to a scene of quiet beauty to which the eye turns with pleasure in every direction.

Artificial walks and drives make the grounds an agreeable resort at all seasons of the year.

A gate-lodge, of neat architecture, ushers the visitor into the grounds, from whence the present mansion is reached by a winding avenue. It is proposed—as the patronage of the institution may warrant—to dot the grounds over with tastefully-designed cottage residences, where patients, either singly or in limited numbers, with nurses ever present, may enjoy any degree of elegance which their tastes or the desire of their friends may elect. By this arrangement, every luxury of the most refined home can be kept within the patient's reach,—a privilege quite impossible in the classifications of an ordinary hospital.

This design—the growth of twenty-five years of practical experience of the proprietor—is the result of a deeply-settled conviction that the present system of domiciliating the insane is essentially false in principle, and only adapted, if at all, to the maniacal and ungovernable; that perfection is only reached where the transition from the natural home is least felt; that insanity gathers fresh terrors in the mind of its timid subject from the many-storied, awe-inspiring edifice; the jostling crowd of those that reflect and gather new suffering from each other's faces; and the depressing effect of disagreeable associations from which there is no escape.

The design of Oak Lawn will especially commend itself to those partially developed cases of mental disease, where retirement and avoidance of the claims and restraints of society is the want most felt; and, also, to cases in their earliest stage, where prompt treatment may avoid the wide-spread exposures that commitment to the ordinary hospital involves.

The institution will also be a welcome resort to the large class suffering under complaints peculiar to the sex,—complaints in the great majority of instances due simply to impaired or irregularly distributed nerve-force, but which naturally develop insanity unless understood and relieved; also to those afflicted with hysteria, and its train of kindred disorders, so distressing to their subjects, and so little controllable by medical art under ordinary circumstances.

Persons whom ill health, or other causes, may have led to excessive indulgence in narcotics or stimulants, will receive special scientific treatment, by which the morbid appetite can be tempered or overcome.

Paralytic persons, and those whose mental disorder is the result of advanced age, will have apartments and conveniences especially adapted to their needs, and nurses of tried experience and faithfulness.

The proprietor begs respectfully to commend his design to the thoughtful consideration of all reflecting minds, as an advance step in the treatment of the most distressing of maladies. An enlightened

public sentiment, directed towards the problem of how best to provide for the insane—now so much discussed in this country and in Europe, will be the best promoter of its success.

Skin Grafting.

From the *Medical Record* we learn that Dr. M. Donnelly, of New York City, and a member of the class of 1868-69, of Rush Medical College, has written a very complete paper on "skin grafting," as studied by him in St. Vincent's Hospital; it is specially to be commended for its attention to details. He closes with a summary of principal points, as follows: "1. Rapidity of cure by grafting over other methods. 2. The elasticity and strength of the new skin over ordinary cicatrices. 3. Absence of contraction and deformity. 4. The simplicity of the operation, and its freedom from pain. 5. Necessities: Absolute rest, and healthy granulations. 6. Size of grafts: A quarter of an inch square; smaller almost useless; larger ones unnecessary. 7. The outside of the arm the best place to take the integument from. 8. In large ulcers, the graft to be placed one inch from the edges; the operation repeated as often as required. 9. The full depth of the *true skin* necessary, as growth of grafts is due to the derma, and not to the epidermis."

A Veteran.

The *New York Observer*, having completed its fiftieth year as the leader of the Religious Newspaper Press, has prepared for its thousands of subscribers a New Year's Gift in the shape of a Jubilee Year-Book, embellished with several appropriate illustrations. The *Observer* was launched in 1823, and for fifty years has sailed in an undeviating course, without once changing its motto or striking its colors. Few papers can present such a successful history; and while there are plenty of good papers published, there are few that we can recommend as strongly as the *Observer* for all the purposes of a family newspaper. Large, comprehensive, and well filled, it cannot fail to pay those who take it four-fold for their outlay. All subscribers get the *Jubilee Year-Book, gratis.* $3 a year. Sidney E. Morse & Co., 37 Park Row, New York.

The Concours,

To fill the positions of instructors during the annual spring and summer session of Rush Medical College, has been conducted to

a highly successful termination. A goodly number of gentlemen presented themselves as applicants for the several positions, and although all of course could not expect to succeed, each, we may say, without an exception, proved himself amply competent and apt to teach.

In several of the departments, very considerable difficulty was experienced in deciding upon the relative merits of the candidates. Were it proper, we should be happy to mention personally, several whose trial lectures were particularly excellent, although not crowned by an appointment.

The Concours resulted in the following appointments, which are detailed from memory, and not in the order of their occurrence:

Charles T. Parkes, M.D., Anatomy.
F. L. Wadsworth, M.D., Physiology.
P. S. Hayes, M.D., Chemico-Physics.
John E. Owens, M.D., Surgery.
O. B. Adams, M.D., Materia Medica and Therapeutics.
Isaac N. Danforth, M.D., Pathology.
Norman Bridge, M.D., Principles and Practice of Medicine.
Walter Hay, M.D., Diseases of the Mind and Nervous System.
James N. Hyde, M.D., Syphilis.
A. Reeves Jackson, M.D., Diseases of Women and Children.
Philip Adolphus, M.D., Obstetrics.
L. W. Case, M.D., Chemistry.

Appointment.

The Senior Editor takes especial pleasure in chronicling the fact, that his associate, Walter Hay, M.D., has been appointed Adjunct Professor of Principles and Practice of Medicine in Rush Medical College. For some time past, Dr. Hay has given the lectures on Diseases of the Mind and Nervous System. It is sufficient encomium to say, that the medical class heartily applaud the appointment.

Statistics of Vaccination.

Attention is directed to the tables on pp. 56, 57 of the Journal which we are permitted to publish through the kindness of our friend, the able and philanthropic Prof. H. A. Johnson, M.D., member of the Executive Committee of the Board of Relief. Further observations hereafter.

THE

Chicago Medical Journal.

A MONTHLY RECORD OF

Medicine, Surgery and the Collateral Sciences.

EDITED BY J. ADAMS ALLEN, M.D., LL.D.; AND WALTER HAY, M.D.

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Original Communications.

ARTICLE I.—*Civil Malpractice. A Report presented to the Military Tract Medical Society, at its Fifteenth Semi-Annual Meeting, Jan. 14, 1873.* By M. A. MCCLELLAND, M.D., Knoxville, Illinois.

"Men see clearly, like owls, in the night of their own notions, but in experience, as in daylight, they wink and are but half-sighted."—BACON.

"Deep science is desirable to the man of fortune,—useful science to the physician and surgeon."—SIR ASTLEY COOPER.

"Professional employment is not only recognized as a legitimate and substantial business of life, but it is regulated by fixed rules to insure due diligence and skill and its appropriate reward."—SMITH *v.* HILL, *13 Ark. R. 173.*

INTRODUCTION.

Appointed on the Committee on Surgery, at the last semi-annual meeting of the Military Tract Medical Society, to prepare a report on some surgical topic, I considered in what way I could best serve the Association, whether by reporting on some special branch of surgery, on surgical appliances, or upon some of the civil relations surgeons bear to the public. Believing that I should serve our mutual interests best by choosing the last, I selected Civil Malpractice as the subject of my report. What it is, I have endeavored

to show, by collating its definitions from both legal and medical authorities. That the definitions, derived from legal sources, might not lose anything from their completeness, I have transcribed the decisions of the courts in full. Definitions from medical authorities have been somewhat abridged; as those for whom the report is written will have no difficulty in consulting the various authorities cited, they will not, therefore, desire the medical aspect of the case so much *in extenso.*

Free use has been made of both legal and medical works, and credit accorded the same. Any failure in this respect is due to oversight, which has especially been guarded against.

To Messrs. CRAIG, HARVEY, SANFORD, and KRETZINGER, of the Knox Co. Bar, I am under obligations for the use of legal authorities. Mr. KRETZINGER, especially, rendered me valuable suggestions and advice. T. S. MCCLELLAND, Esq., of the Chicago Bar, assisted me materially by furnishing Supreme Court Reports of other States, while my friend, Dr. REECE, of Abingdon, Ill., placed at my command surgical authorities and medical journals not in my own library.

Careful proof-reading has, we believe, kept the transcripts of decisions of the courts free from error, and as these decisions are only accessible in very large law libraries, we trust their presentation here will be of value.

CIVIL MALPRACTICE.

Circulars from our Medical schools very generally announce a course of lectures on Medical Jurisprudence. The announcement implies the promise of lectures upon the subject. How often this promise is kept, the memory of every medical practitioner will answer. The writer hereof, during his preliminary course of study, heard but two lectures upon this branch of medical science.

The import of the first was, that physicians generally received intimation sometime before they were called upon to act as experts in courts of law, or to respond in damages, and they would therefore have time to prepare themselves. The substance of the second was, "Get your fee as soon as possible after the service is rendered, and your patients will be better satisfied as to the result of your treatment."

Exposed as we constantly are to suits that will "ruin not only

our fortunes, but our reputations," we receive too little instruction from our professional teachers, as to what we shall do to protect ourselves in the practice of our profession when once embarked in it. If any one doubts the necessity for an acquaintance with the general principles of the laws bearing upon the practice of Medicine and Surgery, let him consult the case of *Alder* v. *Buckley*, 1 *Swan's* (*Tenn.*) *R.* 69, and the other cases cited in this Report, and have his doubts resolved.

State medicine is too extensive, including, as it does, "the application of the principles and practice of the different branches of medicine to the elucidation of doubtful questions in courts of justice," to be considered in a paper of suitable length to be submitted to this Society. I shall therefore limit myself to the principles involved in malpractice.

This term means "an improper discharge of professional duty, either through want of skill or through negligence." The term is not a restricted one, but of wide application. Thus, the improper performance of work, requiring skill and knowledge, in any profession or business, would be designated "malpractice," and laws bearing upon it in all professions would be the same. *Duncan* v. *Blundell*, 3 *Starkie R.* 6. It would seem, however, from certain legal decisions, that more is expected of physicians and surgeons than of any other class of persons. Why should this be? Various reasons might be given in answer. In respect to surgical cases that are investigated in our courts, how frequently we hear surgeons—experts—boasting of the cures they have effected in similar cases; no shortening, no deformity, in their experience; leading the courts, leading juries, leading every one within the sound of their voice, to suppose that perfect cures were and should be the rule, and imperfect cures the exception. How far such statements are borne out by facts, we all well know. We also well know, that surgeons, generally, do not report their bad cases of shortening and deformity through our medical journals, hence the paucity of such cases from this source. Again, remarkable cures frequently result without any aid from us, but should we have but just seen the case, we often accept the credit that should have been given to nature alone. By just such a course we have impliedly warranted the *perfect* recovery of our patients; arrogating to ourselves powers never given to man; and having

so done, we are held to the fulfillment of the contract. *Jones on Bailment*, 99; 3 *Black. Com.* 165. Do not understand me to bring these as specific charges against any gentleman of this Society; the charges are general ones, and arise necessarily from the state of our general society, that permits any one to practice our high calling, whether he be fit or no. What course is right for us in the premises? Can we do aught to release our profession from this reproach? Most certainly. In the language of a former President of this Society, (Dr. Reece,) "we can, by being candid in regard to our own deficiencies, claiming no more than we can perform; no more knowledge than we possess; no more for our art than belongs to it." It should ever be borne in mind that, "every surgeon sets a broken limb as he writes his name, after a fashion of his own," and that good results have, and may be obtained by a variety of methods of treatment.

Malpractice may conveniently be divided into two kinds, viz.: 1. "Civil Malpractice," in which patients bring suits for damages which they have, or think they have, sustained. 2. "Criminal Malpractice," in which the People, or State, is made the plaintiff. We shall, in the present paper, limit ourselves to the consideration of the first division of the subject. Having seen what constitutes malpractice, viz., "want of skill and negligence," we shall endeavor, first, to determine, from the rulings and decisions of the courts in adjudicated cases, what the law requires of us as surgeons; and second, what is considered skill and care by our leading authorities in medicine.

In an action for malpractice, the plaintiff always alleges that the defendant was either ignorant, that is, unskillful, or that he was negligent, that is, careless, or that he was both; and, as we shall see, the surgeon has been refused permission on diverse occasions to give proof of his competency—often the issue that is of most importance to him; hence, some of such cases have been taken to the higher courts, where this right has been recognized, and the case sent back for a new trial. It is in the lower courts, and from juries whose prejudices are usually with the plaintiff, that we have most to fear. Many good men occupy seats in our courts, who wish and aim to do right, and either from want of knowledge as to what should be expected of surgeons, or misled by the testimony of witnesses calling themselves "doctors" in medicine,

give very erroneous instructions to juries; as in the case of *Howard* v. *Grover*, 28 *Maine R.* 97, where the jury assessed damages at $2,000 against the surgeon, not for unskillfully removing the limb, nor for any neglect in its after-treatment, but because in trying to save as much of the limb as possible—a prime principle in surgery—he did *not* remove it a few inches higher up. Here the surgeon was held responsible for an error in judgment. Few of us could follow our profession borne down by such requirements. *McClallen* v. *Adams*, 19 *Pick.* 333. See also article on "Attorney and Client," *Livingston's Law Mag.*, *Aug.*, 1855.

The law on responsibility of surgeons is well laid down in *Hilliard's Law of Torts*, *vol.* 1, *p.* 253. As it covers pretty generally all the points, alleged in cases of malpractice, I will transcribe it in full. He says: "Under some circumstances, a physician or surgeon will be held very strictly answerable for the consequences of his professional action or neglect. Thus, it is held that where medicine is administered to a slave without the consent of his owner, the physician is responsible for all the evil consequences which result from his act. So an action lies against a surgeon for gross ignorance and want of skill, as well as for negligence and carelessness; though if the evidence be of negligence only, which was properly left to the jury, and negatived by them, the Court will not grant a new trial because the jury were directed that want of skill alone would not sustain the action. But, in general, a physician or surgeon is responsible only for *ordinary* or *reasonable* care and skill, and the exercise of his best judgment in matters of doubt; not for a want of the highest degree of skill. It is the duty of the patient to co-operate with his professional adviser, and to conform to the necessary prescriptions; but if he will not, or under the pressure of pain he cannot, he has no right to hold his surgeon responsible for his own neglect. The implied contract of a surgeon is not to cure, but to possess and employ, in the treatment of a case, such reasonable skill and diligence as are ordinarily exercised in his profession by thoroughly educated surgeons; and in judging of the degree of skill required, regard is had to the advanced state of the profession at the time. So the law requires of a *dentist* a reasonable degree of skill and care in his professional operations; and he will not be held answerable for injuries arising from his want of the highest attainments in his pro-

fession. So a physician is expected to practice according to his professed and avowed system, where there is no particular system established or favored by law, and no system prohibited. Hence, in an action for malpractice, evidence to prove that the defendant's treatment of the case was according to the *botanic* system of practice and medicine, which he professed and was known to follow, is admissible."

What constitutes "ordinary skill," and what is proof of it? The phrase is a difficult one to define. There is no standard of comparison by which the question can be governed. Each individual case must stand upon its own merits. Time and place must be taken into consideration. As much cannot be expected of the physician in remote localities, where he is cut off from opportunities of improvement, as from physicians living in communities where opportunity is afforded of seeing disease and accidents under more varied forms; nor from this latter class will as high a degree of attainments be exacted as from physicians connected with large hospitals, or who reside in large cities. If it were otherwise, we should find but few physicians, except in populous communities. *Braunburger* v. *Cleis*, *Am. Law Reg.*, 1864-5, 587. The least amount of skill, therefore, with which a fair proportion of the practitioners of a given locality are endowed, is taken as the criterion by which to judge the physician's ability or skill. 1 *Bouvier's Inst.*, § 1004–5. In proof of this degree of attainment, a diploma is the best evidence, but to be valid it must be proven that the college from which it emanated had corporate authority to grant degrees in medicine at the date of giving the degree, and if the college of another State, its act of incorporation must be offered as proof of its authority to grant such degree. *Ordronaux*, *Med. Jurisprud.* 26; *Hunter* v. *Blount*, 27 *Georgia*, 76; *Hill* v. *Bowdie*, 2 *Stewart & Porter*, 56. It must be borne in mind, also, that courts will take no notice of the different schools in medicine, the term "physician" being legally assumed by any one who chooses to announce himself as a practitioner of medicine. *Sutton* v. *Tracy*, 1 *Mich.* 243; *Reynolds* v. *Graves*, 3 *Wis.* 416. The law recognizes all systems as legitimate; at the same time it requires the physician to practice according to his professed and avowed system. A departure from the received canons of a given

system will be taken as a want of ordinary skill. *Bowman* v. *Woods*, 1 *Iowa*, 441; *Patten* v. *Wiggin*, 51 *Maine*, 594.

The Supreme Court of New York has decided, (*Ex parte Paine*, 1 *Hill*, 665,) that, "whoever offers to practice either homœopathy or allopathy, as his patients may wish, is practically a quack in his profession." This is but a single phase of it. The American Medical Association, in defining the duties for the support of professional character, takes a more general, and consequently more just, view of the above question. Sections 3–4 declare it "to be derogatory to the dignity of the profession to resort to public advertisements, or private cards, or hand-bills, inviting the attention of individuals affected with particular diseases; publicly offering advice and medicine to the poor gratis, or promising radical cures; or to publish cases and operations in the daily prints, or to suffer such publications to be made; to invite laymen to be present at operations, to boast of cures and remedies: to adduce certificates of skill and success; or to perform any other similar acts. These are the ordinary practices of empirics, and are highly reprehensible in a regular physician.

"Equally derogatory to professional character is it, for a physician to hold a patent for any surgical instrument or medicine; or to dispense a secret *nostrum*, whether it be the composition or exclusive property of himself or of others. For, if such nostrum be of real efficacy, any concealment regarding it is inconsistent with beneficence and professional liberality, and if mystery alone gives it value and importance, such craft implies either disgraceful ignorance or fraudulent avarice. It is also reprehensible for physicians to give certificates attesting the efficacy of patent or secret medicines, or in any way to promote the use of them."

Any one violating the above provisions would be designated a "quack;" so, also those practitioners of the "Specific School," those transcendental pathologists, who consider as signs of the same disease, and as possessing equal value, the following symptoms: "Insatiable thirst; pallor of the face; scrofula; sweating of the head after sleep; burning in the palms of the hands; frequent attacks of suffocation; furuncles; vomiting of blood; hiccough after eating or drinking; cutting pain in the rectum while at stools; absence of venereal desire; unbridled lusts; somnolency during the day after eating; paroxysms of anger bordering on mental

alienation; tears frequently at the slightest causes," etc., etc.; and who assure us in their therapeutics, that the administration of the 1,000,000,000,000,000,000,000th of a grain of carbonate of lime—common chalk—produces no less than a thousand and ninety symptoms, from which I select the following: On the fifth day, "itching on the border of the eyelids; thirteenth day, *in the evening*, on going out, unsteady gait; seventeenth day, ardent venereal desires, especially during a walk *before dinner;* twenty-first day, great heat at the extremity of the big toe; twenty-eighth day, itching at the anterior part of the glans penis, after urination," and so on, *ad nauseam.*

What else can we call them but "quacks,"—ignorant pretenders to knowledge they do not possess? Is this overstrained? Read the history of medicine. I must ask pardon for this digression. The law seems inclined to make definitions. Legitimate medicine demands the same right, especially in its own peculiar province.

ADJUDICATED CASES.

The case of *Bowman* v. *Woods*, 1 *Iowa*, 441, is a fine illustration of what these self-styled reformers are doing in the profession of medicine, and as it also illustrates some important points in law, I quote it entire.

The opinion of the court was given by GREEN, J.

"The proceedings below were against Bowman for malpractice as a physician in a case of accouchment. Verdict for the plaintiff, and his damages assessed at $50. The bill of exceptions gives the substance of a Dr. Coffin's testimony, who, it appears, was called in as consulting physician about thirty-six hours after the delivery. At that time Dr. Coffin states that 'the afterbirth was not removed, and the patient was greatly prostrated by the severity of the labor and loss of blood; that she was also suffering from a distension of the bladder, which had not been evacuated since parturition. He gave it as his opinion that the *placenta*, and the distended state of the bladder, should have been removed at a much earlier period, and that such delay would be likely to produce puerperal fever. Several other physicians, as witnesses, concurred in Dr. C.'s view of the practice.'

"The defendant then offered to prove that he was a *botanic* physician, and that according to the botanic system of practice

and medicine, it is considered *improper* to remove the placenta, and that it should be permitted to remain till expelled by efforts of nature. But the proof of these facts being objected to, was ruled out by the court. In this we think there is error. As yet there is no particular system of medicine established, or favored, by the laws of Iowa; and as no system is upheld, none is prohibited.

"The regular, the botanic, the homœopathic, the hydropathic, and other modes of treating disease, are alike unprohibited; and each receives more or less favor and patronage from the people.

"Though the regular system has been advancing as a science for centuries, aided by research and experience, by experience and skill, still the law regards it with no partiality or distinguishing favor; nor is it recognized as the exclusive standard or test by which the other systems are to be adjudged. The evidence of the experienced practitioner of either system, is equally admissible in giving opinions upon questions of medical skill. But in the question before us, the objection does not appear to be the disqualification or skill of the witnesses, but rather the facts which the defendant proposed proving by them. In these facts we can see nothing irrelevant or inadmissible; and as matter of defense to the jury, the defendant was entitled to the benefit of them. A person professing to follow one system of medical treatment cannot be expected by his employer to practice any other. While the regular physician is expected to follow the rules of the old school in the art of curing, the botanic physician must be equally expected to adhere to his adopted method. But on the part of every medical practitioner, the law implies an undertaking that he will use an ordinary degree of care and skill in medical operations, and he is unquestionably liable for gross carelessness or unskillfulness in the management of his patients; and still the person who employs a botanic practitioner has no right to expect the same kind of treatment or the same kind of medicine that a regular physician would administer. The law does not require a man to accomplish more than he undertakes, nor in a different manner from what he professes. Therefore, in this case, if the defendant below could show that he was employed as a botanic physician, and that he performed the accouchment with ordinary skill and care, in accordance with the system he professed to follow, we

should regard it as a legal defense. It should show a full compliance with his profession and undertaking, and if injury resulted from it to the plaintiff, he could properly blame no one but himself. Story, in his work on Bailment, Sec. 435, says: 'But even where the particular business or employment requires skill, if the bailee is known not to possess it, or he does not exercise the particular art or employment to which it belongs, and he makes no pretension to skill in it; then if the bailor, with full notice, trusts him with the undertaking, the bailee is bound only for a reasonable exercise of the skill which he professes, or of the judgment which he can employ; and if any loss ensue from want of due skill, he is not chargeable. Thus,' (to put a case borrowed from the Mohammedan law,) 'if a person will knowingly employ a common matmaker to weave or embroider a fine carpet, he may impute the bad workmanship to his own folly. So if a man having a disease in his eyes, should employ a farrier to cure the disease, and he should lose his sight by the remedies prescribed in such cases for horses, he certainly would have no cause for complaint.'

"Judge Story then goes on to state, that in all such cases the employer ought properly to attribute the loss or injury to his own negligence and mismanagement. The case of the *Commonwealth* v. *Thompson*, 6 *Mass.* 134, exhibits a revolting case of malpractice in which lobelia was administered to such indiscriminate excess as to produce death. Still it was held, that if a medical pretender administers medicine to his patient with an honest intention and expectation of cure, but which causes death, the party prescribing cannot be adjudged guilty; and that 'there is no law which prohibits any man from prescribing for a sick person, with his consent, if he honestly intends to cure him by his prescription.'

"The people are free to select from the various classes of medical men, who are accountable to their employers for all injuries resulting from a want of ordinary diligence and skill in their respective systems of treating diseases. It is to be lamented, that so many of our citizens are disposed to trust health and life to novices and empirics, to new nostrums and methods of treatment. But these are evils which courts of justice possess no adequate power to remedy. Enlightened public opinion and judicious legislation, may do much to discountenance quackery and advance medical science.

"The only other error assigned in this case, which we deem it necessary to notice, is in relation to the admission of medical books as evidence. It appears that the defendant offered to introduce certain medical books, which witnesses had declared as standard works on botanic medicine, and from which they claimed to have derived much of their professional knowledge, but, on objection, the court excluded them. The authorities on this point are not uniform; but the district judge decided in conformity to the prevailing decisions of at least the English courts. In the case of *Collier* v. *Simpson*, 5 *C. & Payne's N. P. R.* 73, it was decided that medical books are not admissible in evidence, though professional witnesses may be asked the grounds of their judgment and opinion, which might in some degree be founded on these books as a part of their knowledge.

"Judge Abbot, in the trial of *Donal* for poisoning, refused an appeal to the works of Thenard, and said, 'We cannot take the fact from any publication, we cannot take the fact as related by any stranger.' But in the trial of *Spencer Cooper*, the court permitted medical authorities to be read, (Guy's Forensic Medicine, 11); and Dr. Beck, in his excellent work on Medical Jurisprudence, vol. 2, p. 666, states, that in this country an objection has never been made to the introduction of authority, or the observation of others, as testimony, by medical men. In this we think the author mistaken, for an appeal to medical authorities has been disallowed by some of the courts of this country; though physicians, when testifying, are permitted to refer to medical authors, and to quote their opinions from memory. Being permitted to refer to and quote authors, we can see no reason why they may not read the views and opinions of distinguished authors. The opinion of an author as contained in his works, we regard as better evidence than the mere statement of those opinions by a witness, who testifies as to his recollection of them from former reading. Is not the latter secondary to the former? On the whole we think it the safer rule to admit standard medical books as evidence of the author's opinions upon questions of medical skill or practice, involved in a trial. This rule appears to us the most accordant with well established principles of evidence." *Judgment reversed.*

The ruling above, so far as it relates to the admission of medical books in evidence, is eminently just. It is from our teachers,

and from our medical authorities, that we form our opinions and draw our conclusions in a vast majority of cases. There are often cases in our courts, concerning which our personal experience does not enable us to form opinions, and we certainly should at least be permitted to show that *our opinions*, when not formed from *our experience*, are sustained by the *written experience* of eminent men in our profession. Professor Lee remarks, that, "Medical testimony when of *any* value, is but little else than a reference to *authority*."

The rules of law governing cases of malpractice in Illinois, are laid down in the cases of *Ritchey* v. *West*, 23 *Ill.* 385, and *Lowe* v. *McNevins*, 40 *Ill.* 209. The opinions of the court in these cases are here given in full.

The evidence in the court below, before the jury in the last mentioned case, was that the plaintiff's (McNevins') arm was broken in the elbow-joint. The defendant (Lowe) bound up the arm with a bandage, and said it was all right; told Mr. and Mrs. McNevins to wet it frequently with vinegar and wormwood. He then left, and did not return to see his patient for several days. When he called again, he examined the arm, and said it was doing well. Mrs. McNevins discovered that the bones were sticking up, and sent for the defendant. He came and examined the arm again, and still claimed it was all right; that the bone which stuck up was attached to the skin and would come all right; and that they must rub it with oil. He said, also, that the patient would outgrow the deformity in five or six days. Said he had cured a broken leg in New Boston, that Drs. Willits and Harrell could not cure; also told of the great cures he had performed in Wisconsin, where he had a large practice. The jury found for the plaintiff; damages, $700. *Appealed.*

Lowe v. *McNevins*, 40 *Ill.* 209. THOMPSON, J. Mr. Justice LAWRENCE delivered the opinion of the court.

"This was an action brought against the appellant for malpractice as a surgeon and physician. In the third and fourth instructions for the plaintiff, the court told the jury that the defendant, if he held himself out as a physician, was liable for whatever damage may have accrued to the plaintiff by reason of *any* want of care or skill on his part, whether he charged fees or not. This states the responsibility of the physician too strongly, as it requires the

highest degree of care and skill, whereas only reasonable care and skill are necessary.

"As to the payment of fees, the instruction is unobjectionable. If a person holds himself out to the public as a physician, he must be held to ordinary care and skill in every case of which he assumes the charge, whether in the particular case he has received fees or not. But if he does not profess to be a physician, nor to practice as such, and is merely asked his advice as a friend, or neighbor, he does not incur any professional responsibility. The case of *Ritchey* v. *West*, 23 *Ill.* 385, is to be understood in this sense. The judgment must be reversed because the instructions required the highest degree of care and skill." *Judgment reversed.*

This case was finally settled for $200, pending a new trial.

The case referred to in the above decision, was a suit brought by defendant in error, against plaintiff in error, to recover for injuries arising from negligence and lack of skill of the plaintiff in error, in the practice of his profession of physician and surgeon. The case was tried in the Adams Circuit Court, SIBLEY, J., presiding.

Ritchey v. *West*, 23 *Ill.* 385. WALKER, J. "No question can arise on the correctness of the decisions of the court below, in admitting or rejecting evidence, in this case, as no exceptions were preserved in the record.

"The principle is plain and of uniform application, that when a person assumes the profession of physician and surgeon, he must in its exercise be held to employ a reasonable amount of care and skill. For anything short of that degree of skill in his practice, the law will hold him responsible for any injury which may result from its absence. While he is not required to possess the highest order of qualification to which some men attain, still he must possess and exercise that degree of skill which is ordinarily possessed by members of the profession. And whether the injury results from want of skill, or want of its application, he will, in either case, be equally liable. This, the law implies, whenever a retainer is shown; but when the services are rendered as a gratuity, gross negligence will alone create liability.

"This, then, presents the question, whether the evidence in the case establishes a want of ordinary skill or reasonable care, in the

treatment of this case. The retainer having been proved, it is not material to inquire whether the case shows gross incompetency or neglect of duty. The concurring evidence of all the physicians shows that the splints and bandages were not properly applied. Had they extended below the wrist, the evidence seems to show that they would have confined the wrist to its proper place. It is probable that such a practice would have tended, notwithstanding the fracture, to have held the broken bone more nearly to its place until a union was formed, and thus have prevented, to some extent, if not altogether, the deformity and disability to use the hand. The physicians also agree that the splints employed were not of sufficient width, as well as too short, for the treatment of the fracture, even if they had been midway between the wrist and elbow, as he supposed. And from this evidence it would seem that there must have been a want of ordinary skill or great negligence in the treatment of the case, in not detecting the dislocation of the wrist joint. The physicians all agree that this portion of the injury could have been easily detected by ordinary care and skill, and the fact that it had been and was still dislocated, was afterwards detected by a person who did not profess surgery or skill in such matters, and had previously only had slight experience in cases of fractured limbs. Then if the evidence of the medical men who were examined as witnesses, is to be credited, and it is supported by the fact that the dislocation of the wrist was detected by a person professing to have no skill, there was a want of ordinary care, or skill, or both, manifested in the treatment of the case.

"The medical witnesses all testify that it is customary and necessary for the surgeon to pay a second visit, for the purpose of ascertaining how the case is progressing, and whether further treatment is required, unless it be dispensed with by the patient. There was no conflict in the evidence, that the plaintiff in error was requested to return, which he agreed to do, for the purpose of further examination, on the following day, and that he never afterwards returned. Then the fact is established by the evidence, that he not only promised to return, but that it was his duty to have done so, unless notified that such attendance would be dispensed with. Then if this was a part of his professional duty, its omission establishes a want of reasonable care and diligence, which, together with his failing to comply with his agreement to

return, must render him liable for all injury which has resulted from its non-observance. Had he returned, as his duty and his agreement required, in all probability the visit would have resulted in detecting the true situation of the injury, and relief might then have been obtained by the employment of the necessary surgical aid. The court therefore did right in refusing the twelfth instruction asked for by plaintiff in error, as it assumed that it was not his duty to again visit defendant in error.

"It is likewise urged, that the court below erred in refusing to grant a new trial on the affidavit of newly discovered evidence. The facts alleged in the affidavit to have been newly discovered, were only cumulative. The question tried by the jury was, whether the wrist was fractured and dislocated at the time when the plaintiff in error was called to treat the injury. The theory of the defense was, that the wrist was not then injured. This evidence which is said to be newly discovered, if it had been produced, would have only tended to show that the wrist received no injury at the time he was called for medical advice. The evidence of the witnesses of defendant in error was, that the wrist was then injured, and from which it had never recovered, and the newly discovered evidence was only rebutting, and was cumulative to his other evidence of that character.

"But if this were not true, the affidavit was fatally defective in not stating that the evidence, said to be newly discovered, was true. If he was unable himself to swear to its truth, he should have produced the affidavits of the witnesses themselves, to satisfy the court of such truth. In an application for a new trial because of newly discovered evidence, it is not sufficient for the party to state that he has been informed and believes that the witnesses will testify to the facts, but the truth of such facts must be verified by affidavit. Otherwise but few cases would occur, in which a party might not procure some person to state that he would on the trial swear to the necessary facts to procure the new trial, and yet, when placed on the stand, wholly fail to testify in accordance with such statement. Such a practice would be liable to great abuse, and should not therefore be adopted.

"Upon the whole of this record we are unable to perceive any error for which the judgment of the [court below should be reversed, wherefore the same is affirmed."

The law regarding what is required of the plaintiff in a suit against a physician for malpractice, is laid down in the case of *Patten* v. *Wiggin*, 51 *Maine*, 594, as follows:—opinion of the court containing, also, a clear statement of what the law requires of surgeons.

Action, *Assumpsit* on account annexed. One portion of account is for professional services as a physician, in attendance on defendant's minor son. The defense to this portion of the claim was malpractice in the treatment of the patient, and such ignorance, want of skill and judgment on the part of the plaintiff in managing professionally the case under his care, that the patient was more injured than benefited by his treatment, and that on the whole case he was not reasonably entitled to recover anything for his services.

Evidence was introduced on both sides as to such treatment and management by the plaintiff during the whole time the patient was under his care. The court (Judge KENT) instructed the jury that, if the plaintiff had been guilty of malpractice, or neglect, or want of ordinary care and skill, within the rules hereafter stated, it would be a defense to that part of the claim which related to the treatment of defendant's son, and the court instructed the jury as follows:

"1. When a man offers himself to the public, or to patients, as a physician or surgeon, the law requires that he be possessed of that reasonable degree of learning, skill, and experience, which is ordinarily possessed by others of his profession who are in good standing as to qualification, and which reasonably qualifies him to undertake the care of patients."

This rule does not require that he should have the highest skill, or largest experience, or most thorough education, equal to the most eminent of the profession in the whole country; but it does require that he should not, when uneducated, ignorant and unfitted, palm himself off as a professional man, well qualified, and go on blindly and recklessly to administer medicines, or perform surgical operations. The rule above stated is the true one.

But the physician qualified within this rule, may be guilty of negligence or malpractice.

"2. The law requires and implies, as part of the contract, that when a physician undertakes professional charge of a patient,

he will use reasonable and ordinary care and diligence in the treatment of the case.

"3. The law further implies, that he agrees to use his best skill and judgment, at all times, in deciding upon the nature of the disease, and the best mode of treatment, and the management generally of the patient.

"The essence of the contract is, that he is to do his best—to yield to the use and service of his patient his best knowledge, skill and judgment, with faithful attention by day and by night as reasonably required. But there are some things that the law does not imply or require. He is not responsible for want of success in his treatment, unless it is proved to result from want of ordinary care or ordinary skill and judgment. He is not a warranter of a cure, unless he makes a special contract to that effect. If he is shown to possess the qualifications stated in the first proposition, to authorize and justify him in offering his services as a physician, then, if he exercises his best skill and judgment, with care and careful observation of the case, he is not responsible for an honest mistake as to the nature of the disease, or as to the best mode of treatment, when there was reasonable ground for doubt or uncertainty.

"If the case is such that no physician of ordinary knowledge or skill could doubt or hesitate, and but one course of treatment would by such professional man be suggested, then any other course of treatment might be evidence of a want of ordinary knowledge or skill, or care and attention, or exercise of his best judgment, and a physician might be held liable, however high his former reputation. If there are distinct and different schools of practice, as Allopathic or Old School, Homœopathic, Thomsonian, Hydropathic or Water Cure, and a physician of one of those schools is called in, his treatment is to be tested by the general doctrines of his school, and not by those of other schools. It is to be presumed that both parties so understand it. The jury are not to judge by determining which school, in their own view, is best. Apply these rules to the evidence.

"Then, as to medical and surgical treatment of the case—was there, or was there not a want of ordinary skill and judgment, such as to render the plaintiff liable within the above rules—such evidence as satisfies you that he either did not possess the educa-

tion, judgment and skill, which authorized him to undertake the case and enabled him to treat it with ordinary skill, or that he was guilty of that neglect or carelessness in the treatment or investigation of the case which showed that he did not faithfully and honestly apply his skill and knowledge, and best judgment."

Defendant requested the court to give the following instruction:

"A physician who, upon request and in consideration of being paid for his services, takes charge of the case of a diseased person, warrants that he possesses and promises to exercise the knowledge, skill and care requisite to enable him to understand the nature of of his disease, and to treat it properly, but the degree of such knowledge, skill and care, is not that which is possessed and exercised by physicians of the highest knowledge, skill and care, but it is that possessed by physicians of ordinary knowledge, skill and care."

The judge declined to give this, except as given in former instructions.

The judge in his charge also instructed the jury, that in cases where authorities differ, or "doctors disagree," the competent physician is only bound to exercise his best judgment in determining which course is, on the whole, best.

Verdict for plaintiff for the amount of his bill, to which rulings and refusals the defendant excepted.

The case on the exceptions was argued before the Law Court, at the May term, 1862, and the rulings of the judge at the trial were sustained.

The opinion of the court was drawn up by APPLETON, C. J.

"The instructions given were correct. A plaintiff in a suit against a physician for malpractice, must prove that the defendant assumed the character and undertook to act as a physician, without the education, knowledge and skill, which entitled him to act in that capacity; that is, he must show that he had not reasonable or ordinary skill; or, he is bound to prove, in the same way, that having such knowledge and skill, he neglected to apply them with such care and diligence, as, in his judgment, properly exercised, they must have appeared to require; in other words, that he neglected the proper treatment from inattention and carelessness. *Leighton* v. *Sargent*, 7 *Foster*, 460. The same facts which would

authorize a recovery for malpractice would constitute a defense in a suit for professional services. Physicians do not warrant the success of their prescriptions. 'The law,' remarks Mr. Justice WOODWARD, in *McCandless* v. *McWha*, 22 *Penn.* 261, 'demands *qualifications* in the profession practical; not extraordinary skill, such as belongs only to few men of rare genius and endowments, but the degree which ordinarily characterizes the profession.' The same views of the law were laid down in *Simonds* v. *Heny*, 39 *Maine*, 155.

"The instructions given were in accordance with the settled principles of law. The one requested had been given in substance. If other instructions had been desired, they should have been requested." *Exceptions overruled.*

RICE, CULLING, DAVIS, and KENT, J. J., concurred.

Wilmot v. *Howard*, 39 *Vermont*, 447.

This was an action on the case against the defendant for damages occasioned to the plaintiff by want of skill of the defendant as a surgeon, in setting the plaintiff's arm, and for negligence and inattention to the same after it was set.

Plea, the general issue, and trial by jury, June term, 1866.

The plaintiff is the minor son of the *next friend*, Daniel C. Wilmot, and was, at the time of the injury complained of, about seven years of age, and resided with his father.

The counsel for the plaintiff introduced evidence tending to show, that about the 9th of June, 1863, the plaintiff fell and broke one of the bones of the forearm, and that the father of the boy took him to the defendant's, to have his arm set, and otherwise dressed and attended to; that the defendant, who professed to be a surgeon, undertook to set and take charge of the fractured arm; that he did set it, but that in doing so, and in dressing the arm, he did not use ordinary skill, and that by reason of an improper bandage, and putting on the bandage too tight, it caused pain and suffering to the plaintiff, and mortification, decay, and the entire loss of the use of the arm. There was evidence tending to show, that when the defendant set the arm he dressed it by first winding a bandage around the arm very tight, from near the hand to very near or quite to the elbow, then put on the splints outside of this, then another bandage wound around the arm tight from near the

hand to the elbow, over the splints; and the testimony of several practicing surgeons was given, which tended to show that an inner bandage was improper, unnecessary, and detrimental, and that the tight manner in which this was put and kept on, in their opinion, caused the arm to perish and mortify. The plaintiff's counsel further gave evidence tending to prove, that as the father was about to leave the office of defendant, it was, at the defendant's suggestion, agreed and arranged by them—this being Wednesday—that on the succeeding Sunday, the father of the boy should take him to the office of the defendant to have the arm dressed or whatever else its condition should require; that immediately after the arm was set, it became and continued very painful, on account of the improper and unskillful bandage and dressing; that on Friday following, the defendant was passing by the house of the father of the boy, when the father called the defendant in to see the arm; and that he then informed him that the bandage was too tight, and that it caused great pain to the arm, and that it had done so ever since he set it; that the boy had been in great distress and complained of the bandage being too tight, and of great pain in his arm, and called the defendant's attention to the fact that the hand of the broken arm was swollen and blistered on the fingers. The evidence tended to show that the hand had become purple, and that the defendant said he would not undo the arm; that he then called his attention to one of the splints being up so high as to interfere with the arm at the elbow, and that the defendant thereupon unbound the outer bandage far enough to slip down the inner splint so that it would not prevent bending the elbow, and put on the bandage again as it was before, after thus adjusting the splint on the inside of the arm.

The plaintiff further gave testimony tending to prove that the defendant then told the plaintiff he need not fetch the boy to his office at all, and agreed to call and see the arm the then next Monday or Tuesday at said Wilmot's; that on the following Tuesday the defendant passed by the house of the plaintiff and did not call, and never after that called upon or saw the arm.

The defendant gave testimony tending to prove that on the Friday when the father of the plaintiff called defendant in to see the arm, it was agreed that the father of the plaintiff, on the succeeding Sunday, should take the plaintiff to the defendant's office to

have his arm dressed if it needed dressing, and that the defendant did not agree to call at the house of the father of the plaintiff.

And the defendant further introduced testimony tending to prove, that on several occasions, one of which was on the next Sunday succeeding said Friday, the father of the plaintiff, not in the presence of the defendant, told individuals that he had agreed to take the plaintiff to the defendant's office on the next Sunday after the said Friday to have the arm examined and dressed, if it needed dressing.

Wilmot testified that he never made any such statement, but admitted that he had stated, on one or two occasions, that at the time the defendant first set the arm, it was understood he was to take the boy to the defendant's office the next Saturday or Sunday after it was first set by the defendant. It was admitted on the part of the plaintiff, that the plaintiff was not taken to the defendant's office, as the defendant claimed the agreement was, and that the defendant was not called upon or requested, after said Friday to attend upon the plaintiff, and that the defendant never did see or attend upon the arm after that time.

The testimony on the part of the plaintiff tended to prove, that the arm was not well and properly dressed, and that the plaintiff has lost the use of his arm by reason of the want of proper skill in setting the same, on the part of the defendant, and by reason of negligence and inattention to the same, on the defendant's part after it was set.

The defendant's testimony tended to prove that the plaintiff's arm was well and skillfully dressed and set, and that the loss of the use of the arm resulted from the peculiar injury of the same, at the time it was broken, and from the fault and negligence of the father of the plaintiff in not bringing the plaintiff to the office to be dressed and attended to as he had agreed to do, and from other want of proper care and attention.

There was other evidence as to what was said and done and agreed upon when the defendant came into the father's house on Friday to see the arm, upon the part of both parties; also as to the effect of the defendant's treatment, the injury to the arm on account of the manner of dressing, negligence, etc., of the defendant, and the treatment by other surgeons.

The counsel for the defendant claimed to the jury in argument

that if the damage to the arm resulted in whole or in part from the mismanagement and negligence of those having the care and management of the plaintiff, that the plaintiff is not entitled to recover; and stated to the jury that he presumed the court would so charge. The court treated this as properly raising and presenting the question. The court did not so charge.

No other requests were made by the defendant's counsel.

The court charged the jury fully upon all points presented by the evidence, and no exceptions were taken to any neglect or omission to charge, or to the charges as given, except as heretofore stated. In the course of the charge the court told the jury that there was an implied obligation on a man who holds himself out to a community as a surgeon, and practicing that profession, that he should possess the proper skill in surgery, that is, not the highest degree of skill that by study and experience the profession is susceptible of, or that is possessed by the most eminent surgeons, but the ordinary skill of the profession generally, such degree of knowledge and skill as surgeons commonly possess, such as is common among surgeons who practice that profession; but that want of such skill would not make the surgeon liable, unless it was also shown that the injury complained of resulted from and was caused by the want of such skill as a surgeon is required to possess.

The defendant's counsel excepted to this charge, so far as it relates to the degree of knowledge and skill a surgeon should possess.

As to the declarations of Daniel C. Wilmot, which the defendant claimed to have proved, to the effect that he, Wilmot, had agreed on that Friday to take the boy to the defendant's office the next Sunday thereafter, no request was made to charge in relation to the evidence as to such declarations, but both of the counsel who argued the case for the defendant, stated to the jury that they did not claim that such declarations were evidence in chief to prove the fact of such agreement, but that they were evidence tending to discredit and impeach Daniel C. Wilmot, and the case was so argued to the jury on both sides, *and the court so charged the jury*. After the court had charged the jury, the defendant's counsel excepted to the charge on this point, claiming then that such subsequent declarations of Daniel C. Wilmot were evidence

in chief. The court then informed defendant's counsel that the charge was as they claimed in their argument to the jury, but that the court would state in the exceptions the facts, so that the Supreme Court might decide whether under such circumstances they were entitled to have their exceptions allowed, and if so, the error, if any, might be corrected by the Supreme Court. The facts were stated for that purpose.

As to what the defendant's counsel claimed, as heretofore stated, as to the effect of mismanagement, negligence, or want of proper care and attention on the part of the plaintiff, and those, other than the defendant, having the care and management of him, the court charged the jury, as to this branch of the case, and its effect on the rights of the parties and upon the damages to the satisfaction of the defendant, and so that no exception was taken, except the court did not charge that if damage or injury resulted, *in part*, from the mismanagement and negligence of those having the care and management of the plaintiff, that the plaintiff could not recover, — and for the omission so to charge, the defendant excepted.

The jury returned a verdict for the plaintiff. *Appealed.*

For the defendant :—The negligence of those having the care, charge and custody of the plaintiff was not merely *permissive*, like permitting, negligently, a child to play in the public highway, or otherwise be in the way of danger; but is active, affirmative negligence.

In a case of mere permissive negligence,—permitting a child to be improperly in the highway,—it was held in *Robinson* v. *Cone*, 22 *Vt.* 213, that if the child were injured by the negligence of the defendant, he would not be precluded from his redress; that if the defendant knew the child was in the highway, he was bound to exercise proportionate watchfulness and the utmost care. That case was decided mainly upon the authority of the case of *Lynch* v. *Nurdin*, 1 *Ad. & El., N. S.* 28 (41 *E. C. L.* 422), in which a similar decision had been made. And the similar decision in *Birge* v. *Gardiner*, 19 *Conn.* 507, was also made upon the authority of *Lynch* v. *Nurdin;* and upon the authority of these two cases, and upon a like state of facts, the same decision has since been made in Connecticut in the case of *Daley* v. *Norwich & Worcester R. R. Co.*, 26 *Conn.* 91. But the case of *Robinson* v. *Cone* is opposed

to the decision in *Hatfield* v. *Roper*, 21 *Wend.* 614, and to the decision in *Wright* v. *Malden & Melrose R. R. Co.*, 4 *Allen*, 283, in both of which, negligence on the part of the parents in allowing the child to be in the way of danger, was held to preclude the recovery, by the child, of damages for injury received.

And the case of *Lynch* v. *Nurdin* has been questioned in *Lygo* v. *Newbold*, 9 *Exch.* 502; *S. C.*, 14 *Eng. L. & Eq.* 507.

But the negligence on the part of the parents in the case at bar is, in its character and consequences, entirely different from the permissive negligence of parents who allow their child to be in the way of danger; and therefore the cases cited above do not control the decisions in this case. Here the parents knew the danger of the child and had the means of preventing the injury, and neglected to use them, and permitted the child to remain in danger, and were also, as the testimony tended to prove, guilty of positive mismanagement in the care of the child.

The case, in its facts, is like the case of *Holley* v. *Boston Gas Light Co.*, 8 *Gray*, 123.

The distinction between the two classes of cases is the difference between permitting a child to be in the way of danger, and permitting a child, known to be in danger, to remain in danger.

And there is this further difference between the case of *Robinson* v. *Cone* and the case at bar: in *Robinson* v. *Cone* the injury to the plaintiff was the result of direct force, exercised and controlled by the defendant; and the reasoning of the court was directed to and upon that state of facts; while, in this case, the negligence on the part of the defendant, if any, consisted in the omission of any affirmative act, and the child was all the time in the care and under the control of its parents.

For the plaintiff:—1. The objection of the defendant that the sayings of the *prochein ami* ought to have been received and considered as testimony in chief, is not well taken. *Vaughn* v. *Porter*, 16 *Vt.* 266.

2. The charge of the court as to the degree of knowledge and skill in his profession a surgeon is required to possess, was correct. *Patten* v. *Wiggin*, *Am. Law Reg.*, 1862–3, 401; *Hilliard on Torts*, 253.

3. The court did not err in omitting to charge the jury that, "if the injuries resulted in whole or in part from the mismanage-

ment of those having the care and management of the plaintiff, the plaintiff could not recover."

1. Even if that be the law applicable to cases of this sort, the defendant was not, under the circumstances of this case, entitled to that charge.

The defense set up was: 1st. That the arm was well and skillfully set and dressed. 2nd. That the loss of the use of the arm resulted from the peculiar nature of the injury, and from the fault and negligence of the father in not bringing the plaintiff to the defendant's office, to be dressed and attended as he agreed to do, and from other want of proper care and attention.

What evidence was given tending to show want of proper care and attention other than that tending to show that the plaintiff was to be taken to the defendant's office to be treated, which was neglected, the exceptions do not state, but we are to conclude that whatever might have fallen out of that character was disposed of in the course of the charge in connection with the whole evidence to the satisfaction of the defendant, so that the court below considered it of no importance to state. We are to presume that the charge was correct, and sufficiently comprehensive, and that what evidence there might have been tending to show want of care, was properly disposed of by specific directions, as was the evidence in relation to the plaintiff being carried to the defendant's office.

2. The exception is not properly before the court. There was no request made that the court would charge in a particular way, and so no refusal. The exception is only to an *omission* to charge. It is not sufficient that the counsel shall say in the course of argument to the jury, that he presumes the court will charge in a particular manner.

3. But the proposition is not sound law, to the extent claimed, and so the court was not bound to notice it. *Vaughn* v. *Porter*, 16 *Vt.* 266.

The opinion of the court was delivered by BARRET, J.

"In this action, the plaintiff claims to recover damages for injury sustained by reason of the unskillful and negligent manner in which the defendant dressed, treated and attended the plaintiff's fractured arm.

"A question is made as to the instructions given to the jury touching certain sayings of the plaintiff's father. Those sayings had been treated, by counsel on both sides, in the argument to the jury, as bearing only on the credit of said father as a witness testifying for the plaintiff to material facts in the case. The court, in the charge, had given instructions conformable to the views taken by counsel in the argument. No prior request had been made to the court on this subject. After the charge had been given, the defendant's counsel requested the court to instruct the jury that said sayings of the father were to be regarded and considered as evidence in chief. These facts are certified to this court for the purpose of having us decide whether the defendant was entitled to exception on this point. In the opinion of this court, the defendant was not entitled to exception. If the defendant claimed any special force, or character, or application for this evidence, he should have made it known before the close of the argument. On the general subject we adhere to the rule pronounced in *Vaughn* v. *Porter*, 16 *Vt.* 266, and re-asserted in *Cady* v. *Owen*, by POLAND, Ch. J., 34 *Vt.* 598. But the present case goes beyond those cited, and asks the court, in favor of the party, to repudiate the character and application which he has claimed for the evidence in his argument to the jury, upon which character and application the counsel for the other side, concurring with his opponent, has also argued the case to the jury, and requires the court to put the evidence to the jury in a new character, in a new application, and to lead to entirely different results from that claimed for it in the argument. This certainly is a novelty in practice. It is understood to be the object of an argument, among other things, to apprise the court of the views and reasons of counsel as to the evidence, as it stands related to the legal propositions involved in the case, and to apprise the opposing counsel of the same things and enable them to present their views and reasons to meet those of the other side; and still further, is it an important and leading object of the argument to bring to the consideration of the jury the various elements and features of the evidence as bearing upon the various propositions of fact which the jury are to pass upon, and aid them in arriving at just results from the evidence as to those propositions.

"The course proposed and pursued by the defendant's counsel

in this case, would thwart all these purposes and objects; and not only so, but would directly tend to embarrass the court, mislead opposing counsel, and confuse and confound the jury.

"We, therefore, put our decision of this point solely on the ground that the defendant was not entitled to the exception, without considering whether the view embodied in his unreasonable request was correct or not. We think the court did not err in disregarding the request.

"The point made in the exceptions upon the part of the charge that related to the skill required of a person holding himself out and undertaking to practice as a surgeon, we have no occasion to take time with, as it is not really insisted on and urged in this court. We remark, however, that, taken in its relations to the declaration and the evidence, it would seem to be entirely proper, and as favorable as counsel could claim for their client, unless they would have him take refuge in the character of a quack, from the consequences of his practice as a *professed* surgeon.

"The most important feature of the case is presented by the exceptions to the omission of the court to charge, 'that if the damage or injury to the plaintiff's arm resulted *in part* from the mismanagement and negligence of those having the care and management of the plaintiff, that the plaintiff could not recover.'

"The court had given a full and satisfactory charge upon every other feature and theory of the defense, and of course had told the jury that if the defendant had exercised the requisite skill, care and attention in dressing and treating, and attending to the fracture, he would not be liable; and, also, that if the damage or injury resulted wholly from the fault of those in charge of the plaintiff, the defendant would not be liable. Upon the case as situated under these points and features of the charge, the request not complied with assumes, and was made upon the assumption, that the jury should find that the damage and injury was caused, *in part*, by unskillfulness and negligence of the defendant; and upon the assumption that the defendant would be liable, unless the putting of that point to the jury in the terms of the request would shield him. Every other theory and ground of defense was made available to him by the charge given, and he was found liable notwithstanding. The point, therefore, is this, whether, if the failure of the plaintiff to get a sound arm resulted, *in any part*, from the mis-

management and negligence of those having charge of him, the defendant would not be liable at all in this action.

"This question is to be considered and determined with reference to both the law and the evidence applicable to the point.

"It is to be noticed that upon the evidence, there is no ground of pretense that any mismanagement or negligence had occurred prior to the Friday after the original dressing, at which time the defendant was called in, and examined the condition of the limb and of the patient.

"The evidence, and the respective claims of the parties, as to the argument on that Friday about the plaintiff being seen by the defendant on the following Sunday, or Monday, or Tuesday, were submitted to the jury with satisfactory instructions.

"Hence, the question really is, whether, upon the evidence, the defendant could be found liable in this action, even though the failure of the plaintiff to get a sound arm resulted, *in part*, from the mismanagement or negligence of those having charge of the plaintiff. If he could, then he was not entitled to have his request granted; if he could not, then it should have been granted.

"It seems to us quite clear, that, upon the evidence, the defendant might well have been held liable, even though the jury should have found that the damage to the arm resulted in part from the alleged mismanagement or negligence of those having charge of him.

"If the jury should have found, as they might on the evidence, that the improper manner in which the arm was dressed and kept till the Sunday after the accident, had brought it into such condition that the plaintiff must inevitably have a defective arm, the defendant would be liable to an action, even though it should be found that mismanagement or negligence in those having charge of the plaintiff may have aggravated the case, and rendered the ultimate condition of the arm worse than it otherwise would have been. The cause of action would have become perfected before the alleged mismanagement or negligence would have supervened. There is no pretense that the parents or attendants of the plaintiff had anything to do with the dressing of the arm. If the jury had found that that dressing was such, when continued according to the directions of the defendant, that it would produce a defective arm, and had that effect, then the right of action

would have been perfected though the ultimate result might have been aggravated by mismanagement or negligence. In the cases supposed, such supervening mismanagement or negligence would bear only on the measure and amount of damage—not on the right of action.

"If the defendant would have been liable in either of the supposed cases, then of course he was not entitled to have his request granted. In this respect the case would stand by analogy upon the same ground as a common class of cases, particularly for recovery of damages caused by alleged defects in highways. The liability of the town is established, the injury proved, and resulting effects become the subject of inquiry; whereupon the town claims, and endeavors to prove that, owing to mismanagement or negligence in treating the injured party, the consequences have been aggravated. Such showing on the part of the town does not touch the cause and right of action, but only the measure and amount of damages.

"And here it may be well to remark that this just illustrates and makes plain the distinction to be taken between the case before us, upon the precise point made by the exceptions, and all the cases cited by the defendant's counsel as applicable to it.

"In those cases the alleged negligence on the part of the plaintiff was simultaneous and co-operating with the alleged fault of the defendant, an element in the very transaction which constitutes the alleged cause of action. The contributory negligence on the part of the plaintiff, in all the cases, that has been held to preclude his right of recovery, has entered *the creation of the cause* of action, and not merely supervened upon it, by way of aggravating the damaging results.

"These views leave this case to stand upon common principles by which a person is subjected to liability for the consequences of his wrongful acts and neglect, and as the case is made up it would seem that the defendant has had accorded to him every legitimate ground and means of defense. The exceptions state, as to what the defendant's counsel claim as to the effect of mismanagement, negligence or want of proper care and attention on the part of the plaintiff, and those other than the defendant having the care and management of him, 'the court charged the jury, as to this branch of the case, and its effect on the rights of the parties and upon

the damages, to the satisfaction of the defendant, and so that no exception was taken except the court did not charge that if the damage or injury resulted, in part, from the mismanagement and negligence of those having the care and management of the plaintiff, the plaintiff could not recover.'

"In the view we take of the case we do not find occasion to go into any general discussion of the subject as it is involved in, or related to, the cases that have been cited. This case stands upon simple and familiar principles in no respect in conflict with any of the decided cases, and directly sustained by some, so far as they stand upon concurring analysis. *Robinson* v. *Cone*, 22 *Vt.* 213; *Birge* v. *Gardiner*, 19 *Conn.* 507; *Daley* v. *Norwich R. R. Co.*, 26 *Conn.* 91."

The "degrees" of negligence are ably discussed in the case of the *Steamboat New World* v. *Frederick G. King*, 16 *Howard's* (*U. S. S. C.*) *R.* 469, where, also, will be found a large number of cases cited, bearing upon the subject. See for same case, *Livingston's Law Mag.*, *March*, 1855, *p.* 163.

The following case is from the English Courts, and with the exception of the case of *Slater* v. *Baker* is, I believe, the oldest on record.

Seare v. *Prentice*, 8 *East*, 448, April 29, 1807, 47 *G.* 3.

This was an action on the case brought by the plaintiff, a shoemaker, against the defendant, whom he had employed as a surgeon, for negligently, ignorantly and unskillfully reducing a dislocated elbow and fractured arm of the plaintiff, of which he had undertaken the cure. The case was tried before HEATH, J., at the last assizes at Hertford; and a verdict having been given for the defendant, under the direction of the learned judge, that direction was now impeached and a rule *nisi* for setting aside the verdict and granting a new trial was moved for by Gurney, upon the ground that there was evidence laid before the jury of the unskillful treatment of the plaintiff by the defendant; but that they were told by the learned judge, that unless *negligence* were proved, they could not examine into the *want of skill*; and the evidence he now admitted, did not substantiate the charge of *negligence* though it proved the want of skill. And he referred to *Slater* v. *Baker*, 2 *Wilson*, 359, to show that an action lay against a surgeon for

ignorance and unskillfulness in his profession, and to *Bull, N. P.* 73, where the general rule is laid down, that in all cases where damages accrue to another by the negligence, ignorance or misbehavior of a person in the duty of his trade or calling, an action on the case will lie; as if a farrier kill my horse by bad medicine, or refuse to shoe, or prick him in the shoeing.

The court granted a rule *nisi*. And now upon the judge's report being read, the case appeared to be this:

The plaintiff's brother-in-law proved on his behalf, that on the 2nd of April, 1805, the defendant attended the plaintiff, who had fallen from a horse, and told the defendant that his arm was broken; the defendant said he thought the arm, which was swollen, was not broken, and applied vinegar to it and bound it with tape. That the plaintiff was under the defendant's care for ten weeks without being cured; he then applied to Mr. Kingston, another surgeon, and after sometime could work, and put his arm to his head. On cross-examination the same witness proved that the defendant was first sent for at night and came directly; that he regularly attended the plaintiff every day but one, till the latter applied to Mr. Pidcock, another surgeon, who about nine or ten days after the accident, attended and assisted with the defendant in setting the elbow.

Mr. Kingston, the surgeon, then proved that in July, 1805, the plaintiff was brought to him, a cripple in his arm, one bone of which was broken obliquely below the elbow; that the plaintiff's arm was almost straight; he could not turn his wrist, and had no motion in the elbow; that the witness broke the callus and set it again, and made (what the witness himself described as) a very fine cure, which was spoken of about the country. He imputed the failure of the defendant in his attempt to cure the plaintiff to *negligence and carelessness;* an apprentice boy, (he said) might have known better; that the bone might have been set within five hours after the accident; though he admitted that the swelling, if much, must first be reduced, which might take a fortnight. And he recommended the plaintiff to bring an action. He also spoke of a conversation with the defendant, who considered it as a very difficult dislocation to reduce; and said he would make a compensation to the plaintiff.

The learned judge told the jury that the gist of the action was

negligence, of which direct evidence might be given; or it might be inferred by the jury, if the defendant had proceeded without any regard to the common ordinary rules of his profession. *That unskillfulness alone, without negligence, would not maintain the action.* And that he was at a loss to state to the jury what degree of skill ought to be required of a village surgeon. But that, whether or not his directions were accurate in this respect, at any rate the witness Kingston imputed only *negligence* and *carelessness* to the defendant and Pidcock in not discovering the fracture of the bone of the arm when they reduced the dislocated elbow; which there was no doubt was properly reduced; and that considering all the circumstances of the case, he did not think that such gross negligence was imputable to the defendant as to make him liable in damages to the plaintiff. The report concluded by stating that the jury found a verdict for the defendant, much to the judge's satisfaction; who intimated that the vaunting language of the witness Kingston must have diminished his credit with the jury.

Shepherd, Sergt., and Espinasse, were now to have shown cause; but though all the court seemed to be satisfied, as well now as when the rule was moved for, that the action well lay for unskillfulness in the profession of a surgeon; yet upon a revision of the evidence as reported, they asked of the plaintiff's counsel what evidence there was of *want of skill* in the defendant: Kingston the surgeon only imputing to him *negligence* and *carelessness* which the learned judge had stated to be a ground of action, and had left to the jury for their consideration; but which the jury had negatived; as indeed the evidence well warranted them in doing.

Gurney, in support of the rule, said that it was to be collected from the whole of Kingston's evidence that he imputed want of skill to the defendant; and that was shown by the expression used by him, that an apprentice boy might have known better. That so much skill at least was required of a surgeon as to be able to tell whether or not an arm was broken or an elbow dislocated. But it was enough that the question of want of skill was wholly withdrawn from the consideration of the jury.

Lord Ellenborough, C. J. "The surgeon who was examined specifically imputed failure of cure to *negligence* and *carelessness*,

whatever other expressions he may have used in the manner of giving his evidence, upon which the learned judge has commented. Therefore, however we may differ from the learned judge, as I certainly do, in thinking that an ordinary degree of skill is necessary for a surgeon who undertakes to perform surgical operations, which is proved by the case of *Wilson*, and indeed all analogous authorities, in the same manner as it is necessary for every other man to have it in the course of his employment; as a farrier who undertakes to cure my horse must have common skill at least in his business, and that is implied in his undertaking; and although I am ready to admit that a surgeon would be liable for *crassa ignorantia*, and would be justly responsible in damages for having rashly adventured upon the exercise of a profession without the ordinary qualification of skill, to the injury of a patient; yet the question did not arise upon the evidence in this case; for no want of skill was imputed to the defendant. and therefore the opinion of the learned judge upon that point does not affect the merits of the verdict upon the evidence in the cause."

The other judge concurred, and GROSE, J., referred to 3 Black. Com. (ch. 9, pp. 163–4,) as confirming the general doctrine.*

(To be continued.)

ARTICLE II.—LECTURE 4—*Neuralgia.* By WALTER HAY, M.D., Assistant to Chair of Practical Medicine, and Lecturer on Diseases of Brain and Nervous System, Rush Med. College.

(Continued.)

Gentlemen: In my last lecture I commenced the subject of the treatment of neuralgia, which you will remember I divided into prophylactic, palliative and remedial. This classification is of course purely arbitrary, and is original with myself, and adopted as simple, and practically convenient. You will find in the course of your reading, that every author has his own ideas of classification in accordance with the leading principle which governs him in his study and management of disease. Mine has been arranged

* Vide Esp. Dig. 601, or vol. 2, p. 222, of New York edition, *Lipscombe* v. *Holmes*, 2 *Campb.* 441, and reporter's note thereto, pp. 442–3.

with reference to my mode of studying these diseases, and you will doubtless, in after years, make classifications for yourselves, such as observation, experience, and the natural bent of your own genius will suggest.

As I have already mentioned to you the most prominent and valuable prophylactic and palliative agents, and some of the more general curative or remedial, I will now suggest to you some of those which have been called specific or anti-toxic, and designed to counteract some special condition of the system, constituting the exciting cause of the pain. These special conditions are, more conspicuously: the malarial, rheumatic, gouty, and syphilitic.

There are three remedies which exercise a marked influence upon the malarial poison; these are, strychnia, arsenic and quinine.

The first I have found capable of producing most valuable effects, although it would be impossible to say whether these were due to its powerful stimulant action upon nerve-tissue as a general nerve-tonic, or to any anti-malarial, or anti-toxic properties it might possess. I am inclined to believe that the former is the true reason of its beneficial effect. The only way to test this question thoroughly, would be to administer it in malarial neuralgia, in neuralgia not of malarial origin, and in some other morbid condition of the system dependent upon malarial influence, and not neuralgic in its character; and comparing the results. In the first two cases, its value cannot be disputed; in the third, it is not yet established. I know of no remedy, however, which has been in my own hands so generally useful in the treatment of neuralgia as strychnia, in doses ranging from $\frac{1}{50}$ up to $\frac{1}{16}$ grain. Below the first dose, the effect is not very decided; above the second, it is unsafe.

Arsenic has been already referred to as a valuable general nervous-tonic; its anti-malarial properties are well established likewise; it seems, therefore, to be doubly appropriate as a remedy in malarial neuralgia. In cardiac neuralgia it is especially valuable, and may be continued, as I have already told you, for many weeks, or even months.

Of all remedies applicable to the cure of malarial neuralgia, you will recognize quinine as the type. The relation of this drug to innervation is peculiar, and I believe its power over ague (intermittent fever) to be due, not to any antiseptic properties it

may possess, according to some authors, nor to its power of destroying organic spores in the blood, which may or may not occasion the disease; but to its direct effect as a nerve-tonic, by which it sustains the equilibrium of functional energy, and prevents the periodical disturbances which constitute the essential factor in this form of disease. I can find no explanation of the effect of this drug; authors, as a general rule, being silent about the *modus operandi* of medicines. My own belief is, that it improves the nutrition of nerve-tissue in anæmic conditions by overcoming arterial spasm, by paralyzing the vaso-motor nerves, and thus admitting a more liberal blood-supply.

The remedy may be administered alone, or combined with iron, or with iron and strychnia.

One grain of strychnia, forty of the sulphate of quinia, dissolved in an ounce of muriated tincture of iron, and administered in doses of twenty to thirty drops, three or four times daily, will suffice for any ordinary case of this form of disease.

Authors speak of this form of disease as being very rare. It is so, doubtless, in the large cities in high latitudes, in which most of them have acquired their experience; but in lower latitudes and warmer climates it is of very frequent occurrence as a sequel or complication of malarial fevers.

Colchicum has been used freely in the treatment of neuralgia, and, where the disease seems to have its origin in the dyscrasia of gout or rheumatism, is valuable. This complication is, I think, more infrequent than is generally believed. Many cases of what was formerly called rheumatism, are now, under more accurate methods of diagnosis, clearly identified as neuralgic.

We come now to that much-abused remedy, "mercury." From what I have already said of the universality of debility as an essential element in neuralgia, it would seem that mercury, the type of analeptic, of tissue-destroyers, could find no place whatever among its therapeutic category, without trenching upon the domain of the little-pill gentry, under their motto "*similia similibus.*" Nevertheless, in certain forms of the disease which have the syphilitic diathesis as their exciting cause, this agent is invaluable, and as these cases are by no means rare, the remedy is often called into play. For you must remember that in the human economy, as in all other organisms, repair, reconstruction, neces-

sarily implies waste, destruction; new tissue cannot grow, new cells cannot germinate, until the old are destroyed and removed to make room for them.

Of the preparations of mercury, the chlorides, iodides, and bromides, are the most useful. The bichlorid, from its greater solubility, and consequent susceptibility of administration in very small doses, *i. e.*, from $\frac{1}{40}$ of a grain up to $\frac{1}{10}$, is better adapted to this class of cases than calomel. The same rule should apply to the double salts, with iodine and bromine. But they have been found to be so irritating to the stomach that they have not come into general use. The proto-iodid and proto-bromid seem best adapted to the syphilitic diathesis, when it becomes an efficient cause of neuralgia. I believe that I was the first to use the proto-bromid, at any rate in this part of the world. When I first began to experiment with it, it was a rare chemical, prepared only by Merk, of Darmstadt. The worst case of sciatica I ever saw, which had baffled the skill of some of the best physicians in the United States, during seven years, after having resisted the influence of every remedy, regular and irregular, (they were all defective,) yielded at last to this. The patient was a man 60 years of age, of almost gigantic size, who had been, during the four preceding years, attacked about the first of January of each year, and about six or seven o'clock in the evening of each day, with sciatic neuralgia, of the most intense severity. I have known him to stand during the whole of fourteen successive nights, holding on to the bedpost screaming with pain; during the day he would attend to his business (he was a merchant) just as usual. I have kept him under the influence of chloroform many entire nights, without any permanent relief. Discovering accidentally, after three years of experimenting, a copper-colored scar with irregular margins, a little above the external malleolus, I learned from the patient that it was the scar of an old ulcer that had troubled him for many years, resisting all sorts of treatment, until it had healed spontaneously, as he said, after his recovery from an attack of cholera, during which he had taken large doses of calomel. Acting upon this hint, I gave him bromid of mercury in $\frac{1}{4}$ grain doses; and the sciatica disappeared, and did not reappear during the remaining ten years of his life, which was terminated by phthisis at 70 years. The neuralgia in this case was doubtless due to thick-

ening of the periosteum in the posterior portion of the sciatic foramen; the case had previously been benefited temporarily by blisters.

The next remedy to which I shall call your attention is iodide of potassium. This seems peculiarly adapted to neuralgias of syphilitic origin, and should be given pretty freely, in doses of ten grains or more, every four or six hours.

I have recently treated, successfully, a case of trigeminal neuralgia of twenty years standing, resulting from an injury to the head consequent upon a railroad accident, with ten grain doses of iodide of potassium, after every other treatment had been abandoned as useless.

There was probably in this case either a thickening of the internal periosteum of the skull, or an hypertrophy of the connective tissue of the nerves themselves.

Cannabis or Indian hemp, or as sometimes called, haschish, is one of the most useful of the narcotics in the treatment of this disease. Much disappointment is experienced in its use, in consequence of the variable strength of the preparations usually found in the shops. When the extract, in which form it is most conveniently used, is made from the leaves of the plant grown in a tropical climate, it may be depended upon when administered in one grain doses every six or eight hours, to allay pain and produce sleep. When prepared from plants of the cannabis indica, grown in this country or in Europe, it has no value whatever.

A class of remedies has recently come into general use, of which bromine is the active principle. In combination with potassium and sodium, calcium, lithium, mercury and iron, in the forms of bromides of those substances respectively, these agents seem to possess peculiar value in the treatment of neuralgia, into which congestion, hyperæmia of the nerve-centres, enters as a factor; and these are many. Hyperæmia is not by any means inconsistent with the idea of debility, indeed it is a very frequent accompaniment, being itself a local expression of vaso-motor debility exhaustion. Indeed, within my own experience, they constitute the best prophylactics against this form of neuralgia. In trigeminal neuralgia, sick headache, I believe the bromide of sodium to be the most valuable agent that has thus far come under my own observation. I prefer it to the bromid of potass. for two

reasons, which have nothing whatever to do with its therapeutic effects. The first of these, is its less disgreeable taste. The second, that it does not, like the bromid of potass., produce a troublesome cutaneous eruption.

The next remedy which I shall mention to you as useful in the treatment of neuralgia, is the actual cautery. The remedy is old; has been abandoned and revived. The cauterizing iron should be applied at a white heat, in order that an eschar may be formed without suppuration. I can speak very superficially of the use of this remedy; it is one which promises much, from the profound alteration which it must induce in the nutrition of the tissues in the neighborhood of the point of application. You will find it difficult to induce patients in private practice to submit to this remedy, although it is not so painful perhaps as many now in use. It is applied now by means of a galvanic battery. Bunsen's is the best, and is thus termed the galvano-cautery.

Moxas have been applied to cure neuralgia, more especially in the form of sciatica. I think "the game is hardly worth the candle," as it would be difficult to say which was the lesser of the two evils, or whether the remedy was not worse than the disease.

Electricity, as a remedy for neuralgia, presents much that is attractive to the theorist, while at the same time its practical value is endorsed by some of the highest authorities. As for example: Messrs. Althaus and Anstie, in England; Duchenne and DuBois Raymond, in France; and Remak and Moritz Meyer, in Germany.

Attempts have been made to prove the identity of electricity and nerve-force; these attempts have thus far proved failures. They may be identical, but it has not yet been demonstrated. Should it be identical with nerve-force, then in it we must have the theoretical remedy for every perturbation of innervation; it would be a nervous panacea, and such you would believe it to be already, if you swallowed without any grains of allowance all that its enthusiastic advocates claim for it. But I must warn you, that valuable as it is, the application of electricity is purely empirical. Why it should benefit in some cases, and injure in others, is not satisfactorily explained as yet.

Systematic writers all tell us that the interrupted current will produce this or that effect, and the constant current this or that other effect, but fail to tell us how these effects are produced, and

why: and, moreover, are sadly at variance as to their statements of facts.

The whole subject of electrical therapeutics presents a wide field for examination and experiment.

With regard to its application in neuralgia, the preponderance of evidence seems to give the preference to the continuous current over the interrupted, and this agrees with my own observations and experiments, which have not, however, been very numerous. With the interrupted, or, as it is sometimes called, the Faradaic, current, I have effected little.

The continuous or constant current, or primary current, as it is called, has produced astonishing results in the hands of Meyer and Remak. It should be applied only a few minutes at a time, daily, and repeated for many days. Sometimes, however, the disease is arrested after two or three applications; sometimes not until after fifty or sixty.

With regard to the direction of the current, it seems to be of little consequence, so long as the current passes through the diseased nerve or centre, according to some authors. Upon this subject there is much difference of opinion expressed by systematic writers on electro-therapeutics, some specifying that a direct, others that an inverse current should be used.

DuBois Raymond gave the name electrotonus to the condition of a nerve within the circuit of a constant battery. He found, what one would infer reasonably, that the original, or what he calls the inherent nerve-current, was increased in power when the artificial current was in the same direction, and diminished when it passed through the nerve in an opposite direction. When the nerve current is increased, it is said to be in the *positive phase*; when it is decreased, it is said to be in the *negative phase*. The increase takes place when the positive electrode (or anode) is nearest the transverse section, (the experiments were made on segments of nerves); the decrease when the negative electrode (or cathode) is nearest.

Brenner, a German electrician, says, that it is rarely possible to conduct the galvanic current in the direction of a certain nerve-current, because the poles are almost always placed on points not having equal physiological importance, and hence the relative positions of the poles are to be considered as indicators of the physio-

logical effects of the current. His method, which is confirmed by Pfluger, and which seems to be the most in harmony with what we know of the relations of electricity to nerve-force, is, to give that pole whose action is most appropriate to the case, the position most favorable, in regard to conduction, for its working on the nerve.

Mr. Althaus, the highest English authority upon electro-therapeutics, says, that, whether the application be central or peripheral, the positive pole alone should be applied to the part which we wish to affect. Eulenburg, a distinguished German electrician, agrees with him; and further states that the negative pole placed in this position will do damage.

Mr. Anstie and Reynolds declare, that while theoretically direct and inverse currents should have different effects, practically they do not, either in the case of spasm or pain.

Dr. Buzzard reported a case of cervico-brachial neuralgia, in which the same effect was produced by placing the positive pole upon the nape of the neck, and the negative in the hand, or *vice versa*.

These differences of opinion amongst the very highest authorities, will demonstrate to you the truth of what I said at the beginning of my remarks upon this subject, *i. e.*, that the application of electricity as a therapeutic agent in the treatment of nervous diseases is yet empirical. To establish laws for its rational and intelligent application more experiments and more facts are demanded.

It is necessary that these experiments should be made, and these facts be collated by you, gentlemen, and that the use of this valuable and powerful agent should not be abandoned to charlatans.

The first electrical machines used in therapeutics, were those of nature's manufacture. It is stated that one thousand years ago the natives of South Africa placed their sick children in a hole filled with water, in which were placed torpedos, one of the cartilaginous fishes, having a portable battery always ready for use. A similar treatment for gout was used by Scribonius Largus, a physician who lived in the time of Tiberius Cæsar. Pliny and Dioscorides both refer to it. The modern application of this method dates back about one hundred years, since the report to the *Societe Royale de Medecine* (Paris), by Mauduyt, in 1773.

ARTICLE III.—*A Fatal Case of Placenta Prævia.* By G. C. PAOLI, M.D., Chicago.

On New Year's day, at 4 o'clock P. M., I was requested to call to see a case of midwifery, complicated with hemorrhage of the uterus.

On my arrival I found Mrs. C., twenty-five years of age, previously the mother of two children, under strong labor pains; she was nearly pulseless, with cold extremities, cadaverous countenance, and in a state of extreme exhaustion. She was tossing about in the bed in her efforts to breathe.

On vaginal examination, I found the uterus well dilated, but very hard to the touch; and besides, a fleshy fibrous mass, which indicated a placental presentation. Previous to my arrival, the liquor amnii had escaped. I gave my patient at once a stimulant, consisting of spiritus terebinthina, and ordered the room to be warmed up, as it was rather cool when I entered.

I placed the patient on the edge of the bed, so that I could easily introduce my hand in the vagina for the purpose of separating the placenta, which was firmly attached to the uterus. After some careful manipulations, I succeeded in breaking up the adhesion, and discovered a breech presentation in grasping one of the feet. I extracted a male child, apparently eight months old, who, no doubt, had been dead a couple of days. There was scarcely any loss of blood during the operation. I placed her at once in a horizontal position, and with blankets dipped in warm water around her body, but I could not by any means get up any reaction.

The woman died about half an hour after delivery, in a state of syncopation.

Remarks on the Case.—The woman had been bleeding, more or less, for two months. Dr. C., who was called to see her, before Christmas, stated to her husband that it was not dangerous, and that he had often observed such cases in the course of his praxis. But as both the woman and her husband became alarmed by the occasional gushing of blood, they sent for Dr. B., who, after examining her, stated that it would not be professional for him to undertake the case, as he would be liable therefor to be expelled from any medical society.

ARTICLE IV.—*Retained Menses from Imperforate Hymen.* By A. FORD, M.D., Bowne, Kent County, Michigan.

About six months ago I was called to see Miss H., aged 14 years. Found her suffering severely with pain in the back and through the lower part of the abdomen; complained of a lump in the region of the navel. On examination, found a hard, movable tumor reaching as high as the umbilicus. Patient quite weak, hardly able to stand. Questioned the mother in reference to the appearance of the menses, who said that she thought it time for the menses to appear; that for about two years the girl had had regular periods of being unwell, but no discharge had taken place. I diagnosed retained menses with imperforate hymen, or closure of the mouth of the uterus; and obtained permission to make a digital examination. Found the hymen tense as a drum-head, and bulging through the vulva. I made an incision with a curved bistourie, and the retained menstrual fluid gushed out. It was dark colored, thick, and almost ropy; there was a large quantity, but do not know how much. When the discharge ceased, she said, "Mother, the pain is all gone!" She has been *regular* ever since, and is as fresh and healthy a girl as you would wish to see.

Translation.

ARTICLE V.—*Researches upon some Questions Relative to Septicæmia.* By H. M. DAVAINE, of Paris. Translated from the French by Prof. J. W. FREER, M.D., Chicago.

"The confusion that has been made between maladies caused by 'charbon,' or malignant pustule, and those determined by the introduction into the animal economy of putrid matters, has existed until the last few years. The study of charbon has caused me to search for characters of differentiation among affections caused by putrefaction, and consequently to the investigation of septicæmia.

"Wishing to place myself under the simplest conditions, I obtained healthy beef's blood from the slaughter-house, and guarded it until it was putrefied, when I inoculated it in divers animals, but as I will show in one of the communications that I hope to have the honor of making to the Academy upon this subject, the conditions of putrefied blood are more complex than one would have anticipated, and it was only after repeated researches, that I was able to obtain, upon certain points, results that were free from doubt.

"On the 1st of February, 1869, I communicated to the Academy of Sciences some of these results, nevertheless I announced that my labors on this subject were still incomplete.

"One of the points in my communication related to the contagiousness of septicæmia; I then recalled the experiments of M. Raimbert, who reported in 1859, the transmission in many animals successively, of a malady determined by putrefied matter that had been inoculated in the first of the series, nevertheless, believing that the result was of the nature of charbon, our learned confrere did not sufficiently recognize the importance of his observations.

"M. M. Coze and Feltz, have discovered another important fact, 'which is, that in creating several generations of infected blood, by inoculation, the last of the series are toxicologically more active than the first, or even the putrid matter itself, that is, it requires more time to kill an animal with putrid matter, than by inoculation with blood of an infected animal. This experimental fact is of the greatest importance; it makes us comprehend how an epidemic is aggravated by successive transmissions.'

"I should say, in order to render homage to truth, and to one of our most illustrious masters, that Magendie recognized the contagious transmission of septicæmia; he has even stated that the virulence of the blood of an inoculated animal is greater than the original putrid matter.

"It has appeared to me that if blood, putrefied in open air, is more or less active than that of an animal killed by inoculation of this fluid, one should be able to produce precise phenomena—death for example—with different doses of these two fluids."

The following is the method pursued by M. Davaine in his experiments:

"I inject with a Pravaz syringe in the subcutaneous tissue, a

determined quantity of the liquid. When it concerns fractions of drops, I mix a drop of septic blood with ten, twenty, or a hundred of water, and inject a single drop of the mixture. Quantities more infinitesimal are obtained by successive dilutions.

"Let us see at first what is the quantity of putrefied blood required to kill an animal. In order to resolve this question, it will suffice to give the abstract of the inoculations which I have practiced for divers researches during many years, nevertheless, I will only speak of those performed upon rabbits and *cobayas*.

"Of seventy-two cobayas, injected with one to ten drops of putrefied blood, forty-three survived, and twenty-five died. Of eleven other cobayas that received a fraction of a drop, none died with a dose of less than one-fourth of a drop.

"Of forty-eight rabbits, inoculated in the same manner with one to six drops, twenty-two survived, and twenty-six died. Of nine others injected with fractions of a drop, none died with a dose less than two-thousandths of a drop.

"From the above we may conclude that the introduction of one or more drops of putrefied blood into the circulation of the aforesaid animals, is not mortal in half of the cases.

"Concerning fractional drops, the cobaya succumbs rarely to less than one-tenth and the rabbit to less than one-hundredth. The extreme seems to be one-fortieth for the first, and one-two thousandth for the second.

"Observe now the second question we have to resolve, viz.: What dose of septicæmic blood—that is to say, blood taken from an animal that has died from inoculation with putrefied blood—is required to produce death in another animal of the same species?

"It would take too long to quote all of my experiences upon this subject; I will limit myself by passing in review a series of twenty-five successive inoculations, or twenty-five generations, which will give a sufficiently precise response.

"The blood of a beef taken ten days after slaughter, in July, and very much putrefied, was injected in the subcutaneous tissue of the necks of five rabbits, in doses of two, four, ten, twelve and fifteen drops. All died; the first in five days, the second in nine days, the third in forty hours, the fourth in twenty-six days, and the fifth in fifty-five days, after inoculation.

"I will have to speak, further on, of the prolonged duration of

life of four of the animals, and the irregularity of this duration relatively to the quantity of liquid received.

"The blood from the heart of the rabbit that died forty hours after injection with ten drops, was injected twelve hours after in the cellular tissue of four other rabbits. The four having received successively, one, two, three and four drops, died the same night—thirty to forty hours after inoculation.

"In order not to abuse the time accorded me by the Academy, I pass to the fifth generation of inoculations: the blood from the heart of a rabbit of the fourth generation, was injected, two hours and a half after death, in three others, in doses of one, one-tenth, and one-hundredth of a drop. Two died in fourteen hours, and the third in twenty hours.

"I pass to the tenth generation: Three rabbits were inoculated with blood of the ninth generation, dead since one hour. One received one drop, another one-ten thousandth, and the third one-twenty thousandth. The first died the following night, the second fifteen hours, and the third thirty-five hours after injection.

"From the fifteenth generation, three rabbits were inoculated with one-twenty thousandth, one-thirty thousandth and one-forty thousandth of a drop. All died in intervals of from twenty to forty hours.

"The blood from a rabbit of the twentieth generation, one hour after death, was injected in doses of $\frac{500}{1000}$, $\frac{1}{100000}$ and $\frac{100}{100000}$ of a drop; of the three that had received these minimum quantities of blood, the first and third died in thirty-five hours, the second in twenty-one hours.

"In the generations following, I arrived at quantities, the minuteness of which exceeded all prevision.

"From the twenty-second generation, three rabbits were inoculated with $\frac{1}{1000000}$, $\frac{1}{10000000}$ and $\frac{1}{100000000}$ of a drop and another with $\frac{10}{1000000000}$ of a drop of the blood of a rabbit dead since two hours, having been inoculated itself with $\frac{500}{1000000}$ of a drop of septicæmic blood. The three died at intervals of from thirty-six to forty hours.

"From the twenty-third generation, a rabbit was inoculated with $\frac{100}{1000000}$ of a drop, another with $\frac{10}{10000000000}$ of a drop. Both died in about thirty-six hours after.

"From the twenty-fourth generation, five rabbits were inocu-

lated with the blood of one that had died from the effects of $\frac{100}{1000000}$ of a drop.

"The first received $\frac{100}{1000000}$, the second $\frac{1}{10000000}$, the third $\frac{10}{100000000}$, the fourth $\frac{100}{1000000000}$, and the fifth $\frac{1}{100000000}$ of a drop of blood from the rabbit mentioned. All of these animals died in less than twenty-four hours.

"Finally: from the twenty-fifth generation, four rabbits received $\frac{1}{1000000000}$, $\frac{100}{10000000000}$ and $\frac{1}{100000000}$ of a drop from a rabbit of the above-mentioned series that had died with $\frac{1}{1000000000}$ of a drop; but only one of these animals died, which was the one that had received $\frac{10}{10000000000}$ of a drop of blood.

"It seems then that the limit of transmissibility of septicæmia with the rabbit may be $\frac{1}{100000000}$ of a drop of septic blood.

"In order to achieve the elucidation of the subject that I have proposed to resolve, it remains to recall the results of inoculation with blood putrefied in open air, and those inoculated with blood from animals that had died with septicæmia. We know, on the one hand, that more than one-half survived the effects of putrefied blood, while on the other, all died from infinitesimal doses of septicæmic blood. Septicæmic virus, therefore, acquires a much greater activity in passing through the blood of a living animal.

"There is another difference between blood that is putrid, or that which is septicæmic, which merits consideration, a difference already signalized by M. M. Coze and Feltz; which is the relative rapidity of death in the two cases.

"I limit myself by simply recalling the results of inoculation with the putrefied blood, which has been the source of the series of which I have made the exposition, viz.: of the five rabbits inoculated with putrefied blood, the duration of life has been from thirty to forty hours with two, and six, nine and twenty-six days with the others; while sixty-nine rabbits inoculated from the generations that followed, with the exception of two, all succumbed in less than forty hours.

"A fact worthy of notice is the irregularity of the duration of life after inoculation. The incubation or duration of the malady is not in relation with the dose administered, as we have seen with the five rabbits inoculated with the putrefied blood, of which the

third with ten drops died in forty hours, and the fourth with twelve drops died in twenty-six hours. The same irregularity appeared with those that died of septicæmia. I mention but the last two of the series of which we have spoken, viz. : one with $\frac{1}{10000000000000}$ of a drop, died in twenty-two hours, the other with a stronger dose lived thirty-five hours.

" With the maladies attending 'malignant pustule,' on the contrary, one remarks a great regularity. The duration of life after injection with the infectious blood is proportional to the dose inoculated.

" We know that the virus from charbon destroys itself by putrefaction ; now in place of inoculating with fractions of a drop of fresh blood, if one takes that which is putrefied, by conservation more or less protracted, the length of life is prolonged in ratio to the length of time that the virus has been subjected to putrefying influences.

" The facts that I come to notice, may throw some light upon a question incompletely understood, or controverted, relative to the pernicious effects of putrefied animal substances.

" Although at the present time we may generally be in accord upon this subject, yet not long since, the dangers arising from these emanations were denied by excellent observers ; such as Parent, Duchatelet, etc. On the other hand, people in the country attribute grave maladies, such as charbon, to infection from flies that have come from putrefying cadavers. Physicians recognize the redoubtable accidents, determined by dissecting wounds, and we know that cadavers of puerperal women are particularly infectious, nevertheless, it is often impossible to explain the variability in the gravity of the accidents, which has been usually placed to the account of individual predisposition.

" Doctor Calles has remarked that fresh cadavers are more dangerous than those which have arrived at a certain stage of putrefaction. This observation appears strange, but will find its explication in the facts that I now report.

" We have already learned that blood putrefied in the open air is rarely fatal in doses of less than one drop, and sometimes it requires ten or fifteen to cause death, whilst the action of blood from an animal that has succumbed from inoculation is infectious

in infinitesimal quantities; this without doubt is the cause of the virulence or non-virulence of certain cadavers.

"I will explain by an example: Two horses are wounded on the field of battle; one dies in a few hours, the other survives for a longer period; but the flesh is lacerated, blood is extravasated under the skin, in the connective tissue and elsewhere. The weather is warm and moist; in less than twenty-four hours the blood putrefies and the horse dies septicæmic soon after.

"Thus, the cadaver of the second horse, and upon the same field with the first, and whose death seemed to be due to the same original cause, is extremely infectious, while that of the first is hardly inoculable. Inoculation with the liquid from one or the other will result very differently, and if the flies that make their repast upon the blood of these two animals, alight upon the wounds of other animals, their contact remains inoffensive in one case, and in the other produces the gravest accidents.

"In order to confirm these views I made the following experiments: A meat fly being placed under a bell-glass, I introduced beneath a little blood from a rabbit that had died the evening before from septicæmia, caused by inoculation with $\frac{1}{10000000}$ of a drop of septicæmic blood. One-half hour after, I separated the sucker of this fly with scissors, and introduced it through a very narrow puncture, under the skin, behind the ear of a vigorous rabbit. It died thirty-five hours after.

"A natural question to present, is that of the duration, longer or shorter, of the virulence of septicæmia, in a certain number of generations. Does the virus diminish in power? Does it exhaust itself at last? Or, on the contrary, does it augment in activity by successive transmissions?

"The solution of these questions is not without interest in point of view of the origin, or of the intensity of epidemic and contagious diseases; for although each of these maladies may have its own proper nature or species, the knowledge of particular facts may have at least the advantage of rectifying misconceptions.

"The question of the increase of virulence by successive generations is proved by the following experiments:

"First. Beef's blood preserved ten days, was inoculated in five rabbits in doses of $\frac{1}{10}$, $\frac{1}{50}$, $\frac{1}{100}$, $\frac{1}{500}$, and $\frac{1}{1000}$ of a drop. The last two were not sick, at least not in appearance; the first three

died. The limit of septicite of putrefied blood, capable of destroying life, is therefore inferior to five-hundredths of a drop.

"Second generation. The blood from the heart of the rabbit that had died from the effects of one-tenth of a drop was inoculated in five rabbits, in doses of $\frac{10}{1000}$, $\frac{20}{1000}$, $\frac{30}{1000}$, $\frac{40}{1000}$ and $\frac{50}{1000}$ of a drop. All died, in intervals of from thirty to sixty hours.

"Second experiment — First generation. Beef's blood preserved five days, was inoculated in five rabbits, in doses of one drop, $\frac{1}{100}$, $\frac{1}{1000}$, $\frac{2}{1000}$, and $\frac{1}{10000}$ of a drop. Only the first three died. The power of the virus to kill in these cases was below two-thousandths of a drop.

"Second generation. The blood of the heart of one rabbit that had died of one-hundredth of a drop was inoculated in three rabbits, in doses of $\frac{100}{1000}$, $\frac{1}{1000000}$ and $\frac{10}{1000000}$ of a drop. All died, in intervals of sixteen to twenty-three hours.

"Third generation. The blood of a rabbit that had died of the $\frac{10}{1000}$ of a drop, was injected in five rabbits, in doses $\frac{100}{1000}$, $\frac{1}{10000000000}$ and $\frac{1}{100000000000000}$ of a drop. All died in from twenty-four to twenty-five hours. These facts prove sufficiently that septicæmic virus acquires suddenly its greatest power.

"I will not undertake to search if the virus which acquires so great an activity in the economy of an animal is of another nature than that of the virus of the putrefied substance that had killed this animal. I can say that it is not the putrefaction of the cadaver that has impressed a new activity to the poison found in its veins; for, in my experiments, often the inoculation has been practiced immediately after death, the body being still warm.

"But I will say more: The septicæmic virus very probably is destroyed by the putrefaction which seizes the animal that it has killed. Here are two experiments that respond to this question:

"First experiment. The blood of a rabbit that had died of septicæmia the 28th of July, (the virulence of which had been established by inoculating rabbits,) was preserved in a flask twenty-three days. The 20th of August it was inoculated in three cobayas, in doses of one-eighth, one-fortieth and one-hundredth of a drop. The result was altogether nul.

"Second experiment. The blood of a septicæmic rabbit that died on the 19th of August, making part of a series that died from doses of $\frac{1}{100000000000000}$ of a drop, was preserved in a flask

twenty days. The 8th of September, a rabbit was inoculated with the blood in a dose of $\frac{2}{1000}$ of a drop. This rabbit was not even indisposed.

"These facts, if sustained by further experiments and observations, possess more than ordinary interest; they explain also the observations of Dr. Calles, relative to the minimum virulence of cadavers in advanced putrefaction."

Selections.

Some Contributions to the Stastistics of the Operation of Nephrotomy, so-called, with a few Observations thereon. By Thos. H. Kearney, M.D., Professor of the Principles of Surgery and Surgical Pathology in the Miami Medical College.

There are certain diseases and operations, which, in consequence of their infrequency, appear to fade out of the professional memory, at times. Such is the operation of nephrotomy, which, though advocated in the Hippocratic writings, and commented on by many of the ancient writers subsequent to the time of Hippocrates, is at the present day hardly mentioned by surgical authors. Mr. Erichsen (in the 5th edition of his work), Sir Wm. Fergusson, Professor Hamilton, and Mr. Gant, do not mention it at all. Dr. Ashurst is very brief on the subject, and does not give any statistical information beyond a bare reference to the case of Marchetti. Professor Gross, in the edition of his work just issued, devotes eleven lines to the subject, and cites three cases of the operation, so-called: that of Marchetti, and those of Gunn, of Chicago, and Durham, of Guy's Hospital. These last two, it will be seen by reference to the published accounts in the journals, were merely exploratory operations, by which the kidney was exposed, so as to admit of being examined for calculus, according to the suggestion of Mr. Thos. Smith. Professor Gross might have correctly mentioned the case of Mr. Bryant, of Guy's, in which the kidney was incised, but without the discovery of the suspected stone. That complete nephrotomy was performed in this case was proved at the *post-mortem* examination of the organ.

During a recent discussion in the Academy of Medicine, the question of the infrequency of such operations as the one then reported, came up; and, in consequence, the writer was induced to make some researches on the subject. The following extracts

are given *verbatim*, or as nearly in literal accordance with the original as possible.

Chelius uses the following language: "The removal of the stone by *cutting* (nephrotomia) can only be undertaken, when an œdematous, or fluctuating swelling, or a fistula, has formed in the loins. Having opened the abscess, its bottom must be examined with the finger or the probe, and if a stone be met with, it must be removed, after enlarging the wound, if it be too confined.—*Syst. Surgery*, Am. ed., vol. 3, p. 268.

After describing pyelitis from calculus and other causes, Sir Henry Thompson adds: "*Abscesses* may be formed under these circumstances; also as the sequel of nephritis; they should not be opened until the tumor points and the diagnosis is perfectly clear. Often they are perinephritic, although originated by disease within the kidney itself; occasionally a calculus may be removed through the opening made."—*Holmes' Syst. Surgery*, vol. 4, p. 333, 1st ed.

Velpeau, after expressing his incredulity in regard to the operation of true nephrotomy having ever been attempted, goes on to say: "The operation cannot, in reality, be proposed, except in a small number of cases, as in those in which the flank, which has become the seat of an evident fluctuation, after the existence of various signs of calculous affections in the kidney, would enable us to reach the morbid collection with facility and certainty," etc., etc. "In such cases the operation is so simple, and is reduced to so small a matter, and has moreover, to be modified by so many controlling circumstances, that it would be useless to describe it in detail."—*Mott's Velpeau*, Blackman's ed., vol. 3, p. 692.

After making some admirable remarks in reference to the ambiguity of symptoms, and the difficulties and dangers of the operation, Mr. Benjamin Bell condemns the performance of true nephrotomy; but adds: "When, indeed, the inflammation induced by a stone in the kidney terminates in an abscess, and when the matter thus collected forms a tumor, in which a fluctuation is distinguished, little or no danger can ensue from laying it open: and in such an event, the stone that produced the tumor will either be discharged along with the matter, or it may, if it can be laid hold of, be afterward taken out with safety."—*Syst. Surg.*, vol. 6, p. 216, 7th ed.

"The incision, in parallelism with the sacro-lumbalis muscle, must be free, and sufficiently deep to enable the surgeon to explore with his finger the extent of the cavity, and seek for gravel, or any large concretion."—*Cyclop. Pract. Surg.*, art. Nephrotomy.

Samuel Cooper, in his dictionary of Practical Surgery, uses these words, under the head of Nephrotomy: "When a stone, from its size, cannot pass from the kidney, and excites inflamma-

tion and suppuration, no doubt the surgeon may make an incision into the tumor, and extract the calculus. In this sense, nephrotomy is certainly a practicable operation. Warner contends that it can only be practiced in such circumstances, notwithstanding whatever may have been said by Marchetti, or others, upon the subject. In such a case, the operation would not be attended with any greater difficulty than the opening of an abscess in any other part of the body."

This last sentence is almost a verbatim quotation from Joseph Warner's Cases in Surgery, p. 241.

It is evident from the foregoing extracts, that the authors quoted do not regard such an operation as the opening of a lumbar abscess, in connection with a disorganized kidney, and the extraction of a renal calculus, an operation of any magnitude; and it may be inferred from the language used, that such cases are not exceedingly rare. For none of them comment on their infrequency, but speak of the removal of a calculus under such circumstances as a matter of course. Yet, an examination of the literature of the subject, as far as rather limited opportunities would permit, affords only the following cases—sufficient, however, to dispose of the claim made for such a case recently, that it was the second of its kind reported!

Cases.—A case is referred to by Heister, though without the particulars. After arguing in favor of the practicability and propriety of true nephrotomy in certain cases, he proceeds in the following quaint language:

"But nothing can be more reasonable than to perform Nephrotomy, when we are directed to it by Nature pointing out the place, by a Tumour and Abscess formed in the loins, from a Calculus in the Pelvis or Kidney. In such a Case, we are also supported by the Advice and Authority of Schenckius, Wedelius, and Meekren; together with Lavaterus, formerly an eminent Physician and Surgeon of Helvetia, with whom I amicably cohabited for some time, in the Year 1710, he then practicing Surgery at London with great Applause. He at that time told me that he had not only performed this Operation with Success in the above-mentioned Case, but had also publickly declared (in the last Page but one of a Treatise published in the Year 1708, at Utrecht on the Rhine, *de Atriteis et Hyposspadiceis*), 'I perform the Operation of Nephrotomy, on either of the Kidneys, when Nature directs to that Practice by forming an Abscess.'"—*A General System of Surgery*, by Lawrence Heister, vol. 2, p. 163.

"Gaspard Bauhin operated on a girl, born of parents of calculous diathesis, who was attacked with a tumor in the lumbar region, following a total suppression of urine. A surgeon applied poultices to this tumor, during two months, in the hopes that it would suppurate, but without any success. At last he distin-

guished a very hard point in the tumor, into which he made an incision through which he extracted two calculi. This operation was followed by all possible success."—*Rayer*, *Maladies des Reins*, vol. 3, p. 59.

"Rousset also reports that a man who had suffered for a long time with nephritic pains, accompanied by vomiting, presented afterwards a considerable tumor between the groin and iliac bone. A very experienced surgeon made an opening into the tumor and evacuated a quantity of urine mixed with pus, and a calculus of the size of a bean.—*Ibid.*, vol. 3, p. 222.

"Aymar, a surgeon of Grenoble, communicated to Riviere the case of a man who had a tumor in the lumbar region, from which he removed calculi as large as almonds, and later one the size of a bean. During ten years, consecutively, there ran out of this fistula a serous fluid, which would soak the linens applied to it, so that it seemed as if they had been dipped in water. The fistula closed from time to time, only to open again spontaneously after the lapse of some months."—*Ibid.*, vol. 3, p. 325.

"Roonhuysen extracted, by opening an abscess in the right kidney, a tolerably large stone, of which he gives a drawing in his work. He conducted the treatment of the wound, according to the rules of the art, to a perfect cure, so that the patient lived in perfect health for two years after. At the end of this time, a new inflammation occurred on the same side of the loins. The surgeon, not doubting but that there was still some foreign body there, opened the cicatrix and removed a second stone, smaller than the first. The wound closed, and the patient since has always enjoyed good health."—*Ibid.*, vol. 3, p. 226.

"Ledran reports a case of abscess in the loins, after opening which, he extracted a calculus as large as a pea."—*Ibid.*, vol. 3, p. 233.

"Collot saw Cresse incise a lumbar abscess, from which he removed a stone."—*Ibid.*, vol. 3, p. 225.

"Mr. Gregory Smith has seen three cases of abscess in the kidney, resulting from the presence of calculi in the organ. One of these cases was that of a patient who was admitted some years since, in a state of hectic, into St. George's Hospital. There was a large abscess pointing, and apparently about to burst in the lumbar region. Sir B. Brodie laid the abscess freely open, and on introducing his finger into the cavity, detected several loose bodies at the bottom of it; these, being removed by means of a small forceps, proved to be three calculi of the size of nutmegs."—*London Lancet*, 1839 and 1840, vol. 2, p. 449.

T. Spencer Wells makes the statement: "I have twice opened perirenal abscesses in the loin, and in one case removed a small renal calculus through the opening."—*Dub. Quarterly Jour.*, Feb. 1867.

Nelaton, in the fifth volume of his *Elemens de Pathologie Chirurgicale*, records a case of the removal of a large renal calculus from an abscess, the opening of which was accomplished partly by incision, and partly by caustic.

Thus, we find eleven cases recorded, in which abscesses communicating with disorganized kidneys, and containing calculi, have been opened and the calculi immediately extracted. Others have been reported, where the abscesses have been incised and the calculi removed, after varying intervals; but are omitted here, as not being cases in point. Such are the cases of Lafitte and Pouteau.

Another point raised in the recent discussion in the Academy, was as to the proper application of the term nephrotomy—the compiler of this paper taking the ground, that, although surgical writers generally sanction the use of the word in its widest sense, yet, as precision of meaning is so important in the statement of scientific facts, the word nephrotomy ought to be used only in its literal sense. As now used, the word is absolutely worthless for conveying any definite meaning; for under it we find indexed throughout surgical literature such cases as the opening of perirenal abscesses, the dilatation or enlargement of renal fistulæ, the extraction of calculi from abscesses, as in the cases quoted, and the total extirpation of the organ, as well as incisions into the true substance of the gland—the only cases to which the word ought to be applied. Perhaps the only value the word now possesses is in the convenience it affords for foisting on the profession an insignificant operation, under the dignified and high-sounding name of nephrotomy!

The writer is happy in being able to quote so high an authority as Rayer in support of the opinion he advanced on this point. The following extracts from that author's work show very satisfactorily his disapproval of the loose and vague use of the word, which includes, under nephrotomy, operations varying so widely in character.

"Lafitte and Pouteau have practiced with success in similar conditions (that is, when an abscess exists which has had its origin in the kidneys), the opening of such abscesses. Not only have they been so fortunate as to effect a sensible improvement in the health of the patients after the evacuation of the pus, but also to extract the calculi which had been the cause of the inflammation. This operation has been followed by a complete cure. Nevertheless, I must remark that they have erroneously given the name of nephrotomy to the simple opening of an extra-renal abscess, the result of calculus pyelitis."—*Rayer*, vol. 3, p. 52.

This sentence occurs introducing the account of the operation of Hippeau:

"Since then" (that is, the time when Hevin wrote upon nephrot-

omy, in the *Memoires de l'Academie Royale de Chirurgie*), "there have been several times cited, as examples of nephrotomy, cases of simple incision of abscesses of the loins proceeding from the kidneys. Such is the following reported by Hippeau, etc."—*Ibid.*, p. 236.

"Several observations of lumbar abscesses proceeding from the kidneys, opened either with a cutting instrument or caustic, and whence renal calculi have been removed, have been also reported by Lafitte, and quoted erroneously as examples of nephrotomy."—*Ibid.*, p. 235.

After stating the opinions of various of the older surgeons in regard to the advisability of the operation of nephrotomy, Rayer continues thus: "I take this occasion to remark, that although the question of *nephrotomy* had been disputed, there was almost a perfect unanimity among surgeons and physicians of the highest authority, recommending the opening of lumbar abscesses proceeding from the kidneys, in order to give issue to pus and sometimes even to calculi."—*Ibid.*, p. 222.

The foregoing quotations and remarks represent, substantially, the writer's comments and criticisms on the case reported in the Academy on the 26th October; and are directed solely to the statements then given of the operation and the amplification of those statements called out by the remarks then made. It is not intended to follow that case through its subsequent variations of history.

My remarks were intended to apply to a case of lumbar abscess, resulting from chronic suppuration and degeneration of the kidney, caused by the presence of a calculus; and such a case as the original report made it appear to be.—Lancet and Observer.

On Night Diet.

Dr. Friedreich Betz (Memorabilien xvi, 4 p. 92, 1872) remarks upon the subject of food as follows:

Very small children take food often, both day and night and at regular intervals, two or three hours apart. It is only later and gradually that the child begins to limit its meals to the daytime. Hunger is then experienced at certain times of the day; in the morning between 9 and 10, in the afternoon between 4 and 5 o'clock. At these periods the chief meals of the day should really be taken, but different circumstances have changed these times among most people. Food is then taken according to habit or time: whether this custom is perfectly safe or not must remain as yet an open question. At any rate the physiological periodicity of demand should be regarded as a main column in the temple of health.

But where digestion is rapid, where circumstances permit only smaller quantities, or where the body is changed by disease and the various metamorphoses are interfered with, there must be a change not only in the quantity and quality, but also in the time of administration. The exclusive ingestion of food by day is insufficient for the body in disease, and it becomes necessary, then, to feed the patient at night also. The manner in which it is to be taken, and the amount, are questions which may not be established by general law. Each case has its own requirements. Patients themselves do not often know how much they are reduced as inanition sometimes progresses very slowly, for instance, in chronic phthises; here, too, appetite becomes blunted. It is only by direct experimentation, thus, upon each case that the time, amount and frequency of food can be established. Yet it may be stated, in general terms, that the most appropriate time is between 9 and 10 in the evening and 1 and 3 in the morning. The character of the food is to be determined according to circumstances; it should be, in general, easily digestible food. Alcohol, opium and cod-liver oil may be of great utility at times.

The diseases which call for this supervision as to night food, are, besides the acute and chronic hemorrhages, bronchorrheas, suppurations, diarrheas, diabetic conditions, convalescence after exhausting diseases, inanition after nervous diseases, long continued hysterias, hypochondriases and other mental conditions; also in mental overwork, premature senility, inanition consecutive to chronic gastric catarrh, profuse sweatings, physical exhaustion, infantile atrophy, dropsies, etc.

Inanition often occurs so insidiously that the patient himself is not aware of it. A most particularly valuable symptom indicative of its invasion is sleeplessness, in combat with which, alcohol is a remedy not to be underestimated. It is certainly true that some reduced patients are more or less somnolent; these patients, too, require nocturnal food.—*Schmidt's Jahrbucher*, Nov. 12, '72. *The Clinic.*

A Lumbricus Discharged through an Abscess about the Hip-Joint —Recovery.

The following curious case occurred in the Mansfield Workhouse Infirmary in May last:

J. W., aged thirteen, was suffering from strumous disease of the hip-joint, but able to get about on crutches. The usual abscesses kept forming and bursting about the joint: one abscess, however, after bursting, discharged as part of its contents a large lumbricus, fully eighteen inches long, and coiled upon itself. How did it get there? At any rate, the wound healed rapidly, and the boy's health improved considerably.—*Lancet*, Nov. 30, 1872.

Editors' Book Table.

[NOTE. — All works reviewed in the columns of the CHICAGO MEDICAL JOURNAL may be found in the extensive stock of W. B. KEEN, COOKE & Co., whose catalogue of Medical Books will be sent to any address upon request.]

BOOKS RECEIVED.

The Pharmacopœia of the United States of America. Fifth Decennial Revision. By authority of the National Convention for Revising the Pharmacopœia, held at Washington, A. D. 1870. Philadelphia: J. B. Lippincott & Co. 1873. Pp. 383. Cloth, $1.75.

The present revision of the Pharmacopœia is more complete and extensive than we had supposed would be the case, and both physicians and druggists should procure this book and take appropriate note of changes. Twenty-four medicines have been added to the primary list, and three to the secondary. One substance is dropped from the primary and four from the secondary list. Eighty-two preparations have been added and seven omitted. As new classes we find *Chartae* (including Cantharides and Mustard paper), *Glycerita*, *Suppositoria* and *Succi*, which latter explain themselves. The new chemical nomenclature is adopted only to a limited extent, and numerous minor changes made necessary by advances or changes in chemistry have been introduced. The committee of ten have well performed their duty, and the publishers have brought out the book in their well-known neat and attractive style.

The Practice of Surgery. By THOMAS BRYANT, F.R.C.S., Surgeon to Guy's Hospital. With 507 illustrations. (8vo. Pp. 984. Extra cloth, $6.25; Raised bands, leather, $7.25.) Philadelphia: Henry C. Lea. 1873.

The vast experience and distinguished reputation of the author of this book, led us to anticipate a valuable, useful and practical work from his hands, and in this we are not disappointed in looking it over. The accumulated stores within the walls of "Guy's" having been placed freely at the disposal of the author, have enabled him to write *ex cathedra* with the authority of unusually

large experience. Although briefly entitled "The Practice of Surgery," it really embraces "large discourse" upon guiding principles. Most of the numerous illustrations are original, prepared expressly for this book. Taking it together, we commend it as a capital contribution to surgical literature, largely worthy of being added to the libraries of our readers.

Wohler's Outlines of Organic Chemistry. By RUDOLPH FITTIG, Ph. D., Nat. Sc. D., Professor of Chemistry in the University of Tubingen. Translated from the Eighth German Edition with additions, by IRA REMSEN, M.D., Ph. D., Professor of Chemistry and Physics in Williams College, Mass. Philadelphia: Henry C. Lea. 1873. Royal 12mo. Pp. 530. Extra cloth, $3.00.

The number of editions of this work in Germany, attest the high repute it has gained as the leading text book and standard authority. The American edition receives the express approbation of the author, and in it will be found numerous additions and alterations, bringing it up to the latest date. As a work of reference it is invaluable, and by the forethought of the editor it is rendered more than usually so by the free use of large full-faced letters for each prominent article treated of.

Diseases of the Ovaries: their Diagnosis and Treatment. By T. SPENCER WELLS, Fellow and Member of the Royal College of Surgeons, England, Surgeon in ordinary to the Queen's Household, etc., etc., etc. New York: D. Appleton & Company, 549 & 551 Broadway. 1873. 8vo. Pp. 478.

This volume is issued simultaneously in London and New York, and may be considered as the very latest, as it is by far the most satisfactory, if not the best, exposition of the subject. It is clear, concise, thoroughly scientific, and yet practical. We advise every practitioner who has a case of ovarian disease under observation to buy and read this book. Incidentally we notice that Mr. Wells prefers as an anæsthetic chloro-methyl, or, as it is more commonly termed, the bichloride of methylene.

Parturition Without Pain: A Code of Directions for Escaping from the Primal Curse. Edited by M. L. HOLBROOK, M.D., Editor of the "Herald of Health." Third Edition, Enlarged. New York: Wood & Holbrook. 1872. 12mo. Pp. 147.

Surgical Diseases of Infants and Children. By M. P. GUERSANT, Honorary Surgeon of the Hopital des Enfants Malades, Paris; Honorary Member of the Societe de Chirurgie, etc. Translated from the French by RICHARD J. DUNGLISON, M.D. Philadelphia: Henry C. Lea. 1873. 8vo. Pp. 354. $2.50.

Briefly, the results of twenty years service in the great Children's Hospital of Paris.

Obstetric Aphorisms: For the use of Students Commencing Midwifery Practice. By JOSEPH GRIFFITHS SWAYNE, M.D., Physician Accoucheur to the Bristol General Hospital, and Lecturer on Obstetric Medicine at the Bristol Medical School. Second American from the Fifth Revised English Edition, with Additions. By EDWARD R. HUTCHINS, M.D. Philadelphia: Henry C. Lea. 1873. 12mo. Pp. 189.

This little manual has secured, as we prophesied on its first appearance, deserved popularity.

PAMPHLETS, ETC.

Fœticide or Criminal Abortion: A Lecture Introductory to the Course on Obstetrics and Diseases of Women and Children, University of Pennsylvania. By HUGH L. HODGE, M.D. Fourth Edition. Philadelphia: Lindsay & Blakiston. 1872. Paper, 30 cts.; Cloth, 50 cts.

Much good may be done by the further circulation of this lecture.

Braithwaite's Restrospect of Practical Medicine and Surgery. Part LXVI. January, 1873. Uniform American Edition. New York: W. A. Townshend, Publisher. $2.50 a year, in advance, Postage Prepaid. Half Yearly Parts, $1.50.

The Journal of Anatomy and Physiology. Conducted by G. M. HUMPHREY, M.D., F.R.S., Prof., etc., and by WM. TURNER, M.B., Prof., etc. Second Series. No. XI. November, 1872. Macmillan & Co., Cambridge, London and New York. 8vo. Paper. Pp. 200; and seven pages of lithograph plates. $1.75.

Transactions of the Wisconsin State Medical Society. 1872. With the Constitution, By-Laws, and List of Members. Pp. 168.

Transactions of the New Hampshire Medical Society. Eighty-Second Anniversary. Held at Concord, June 11th and 12th, 1872. Pp. 96.

Transactions of the Medical Society of the State of West Virginia, instituted April 10th, 1867. Pp. 100.

Chronic Urethral Discharge. By C. H. MASTIN, M.D., Mobile, Ala. Read before the Alabama Medical Association. 1872. Pp. 32.

The Natural Cure of Disease. Synopsis of a Lecture by Prof. SAMUEL G. ARMOR, M.D.

Editorial.

Our Publishers

Are "home again" in their new quarters, but the old location before the fire—*in statu quo ante ignem*—and we were about preparing an account of the same, when we happened upon this extract from the correspondence of the *Weekly Trade Circular* of New York, which we reproduce and indorse, and to which we add "the half has not been told," and if, then, anybody is incredulous, let him "come and see." Chicago (our Publishers and Printers inclusive) has seen fiery tribulations, compared to which ancient Job's were a bagatelle, but like him its latter days are getting to be its best days.

"Messrs. Keen, Cooke & Co. are now taking the lead here in the general book trade. This is due, in a large measure, to their wise policy in providing themselves with spacious and convenient quarters immediately after the fire, and thus having the stock room, and will to do all the business that came to them at a time when the other dealers were unfortunately crowded into narrow and confined space. The result of the fire, therefore, has been rather to widely extend and stimulate their business than to cripple it. The retirement of Messrs. S. C. Griggs & Co. from the trade has also, no doubt, had its influence. Messrs. Keen, Cooke & Co. have just removed from their temporary quarters, corner Washington street and Wabash avenue, to their old stand, 113 and 115 State street, but into a new building, and, as compared with the old one, much more elegant and convenient in every respect. The building is one of the finest marble fronts in the city, and is known as the Williams & Ferry Building. It was planned with special reference to the book trade, and the five

stories are shared by Messrs. Keen, Cooke & Co. with Messrs. A. S. Barnes & Co. The retail department, on the first floor, occupies space 50 by 150 feet, and is beautifully and systematically arranged, the shelves on either side being apportioned according to their respective importance to the various American and foreign publishers, and the books therein being alphabetically arranged so that every clerk can lay his hand on any book even in the dark. Busts of prominent authors, ancient and modern, appropriately adorn and dignify these separate alcoves. The room is lighted with reflectors *a la* Ball & Black's in New York, and all other appurtenances are of like appropriateness and elegance. The basement is 50 by 200, and exclusively devoted to school books, stationery, inks, etc. The second story is used for small stationery and as a packing room. All the several departments are connected and communicated with by a steam elevator as well as by spacious stairways.

"Altogether the establishment presents a very attractive appearance, whether to the lover or purchaser of books, and excels, in outward appearance at least, anything we have ever had in Chicago in the way of a book store."

A Movement in the Right Direction.

We notice that the proprietors of the well-known Crystal Springs (Yates Co., N. Y.), instead of prostituting the curative value of their mineral springs by establishing a "water cure," under the management of some blatant *pathist*, with a wider and more rational view of the real relations of mineral waters to therapeutics, have secured the advice and attendance of a physician of acknowledged ability, professional learning and experience, W. R. Marsh, M.D.; for many years occupying a chair in the Iowa Medical College at Keokuk, and during the whole of the late war serving as regimental and staff surgeon in the U. S. Army. The state of Dr. Marsh's health having obliged him to retire, at least temporarily, from general practice in this city, where he has been located since the close of the war, he has entered upon the duties of this position, determined that there shall be at least one resort for invalids, where physicians may send them without fear of blundering incapacity or bald quackery in treatment.

We cordially recommend the example set by the proprietors of the Crystal Springs to similar establishments throughout the country. Let us have these powerful adjuvants to the treatment of disease, everywhere put under enlightened control.

Civil Malpractice.

In the present No. of the JOURNAL is commenced an elaborate article on this subject which we cordially commend to the careful perusal of our readers. Such of our legal friends as have looked it over in advance sheets speak highly of its merits, and we are sure our professional brethren will cordially indorse their opinion. It covers a space which the valuable work of Elwell does not embrace.

Original Communications

Are solicited from our professional friends, but we must decline to insert them as such when previously sent to other medical journals, or especially to non-professional periodicals.

☞ The Annual Commencement of Rush Medical College will take place at Central Hall, corner of Wabash avenue and Twenty-second street, on Wednesday, February 19th, at 8 P.M. The Valedictory Address will be delivered by Prof. Walter Hay.

A Bill to Promote the Science of Medicine and Surgery in the State of Illinois.

SECTION 1. It shall be lawful in cities and counties whose population exceeds twenty thousand inhabitants, for superintendents of penitentiaries, wardens of poorhouses, coroners and city undertakers, to deliver to the professors and teachers in medical colleges and schools in this State, and for professors and teachers to receive, the remains or body of any deceased person, for purposes of medical and surgical study: *provided*, that said remains shall not have been regularly interred, and shall not have been desired for interment by any relative or friend of said deceased, within twenty-four hours after death: *provided, also*, that the remains of no person who may be known to have relatives or friends shall be so delivered or received without the consent of said relatives or friends: *and provided*, that the remains of no one detained for debt, or as a witness, or on suspicion of crime, or of any traveler, or of any person who shall have expressed a desire in his or her last sickness that his or her body may be interred, shall be delivered or received as aforesaid, but shall be buried in the usual manner: *and provided, also*, that in case the remains of any person so delivered or received shall be subsequently claimed by any surviving relative or friend, they shall be given up to said relative or friend for interment.

SEC. 2. And it shall be the duty of the said professors and teachers decently to bury in some public cemetery, the remains of all bodies after they shall have answered the purposes of study aforesaid; and for any neglect or violation of the provisions of this act, the party so neglecting shall forfeit and pay a penalty of not less than twenty-five nor more than fifty dollars, to be sued for by the health officers of said cities, or other places, for the benefit of their department.

SEC. 3. The remains or bodies of said persons as may be so received by the professors and teachers, as aforesaid, shall be used for the purposes of medical and surgical study alone, and in this State only; and whoever shall use such remains for any other purpose, or shall remove such remains beyond the limits of this State, or in any manner traffic in the same, shall be deemed guilty of a misdemeanor, and shall, on conviction, be imprisoned for a term not exceeding one year in a county jail.

SEC. 4. Every person who shall deliver up the remains of any deceased person in violation of, or contrary to, any or all of the provisions contained in the first section of this act, and every person who shall receive said remains, knowing the same to have been delivered contrary to any of the provisions of said section, shall each and every of them be deemed guilty of a misdemeanor, and shall, on conviction, be imprisoned for a term not exceeding two years in a county jail.

Married.

On Jan. 14th, at Hillside, the residence of John T. Graham, Mt. Washington, Md., by Rev. R. H. Clarkson, Bishop of Nebraska, Dr. P. H. ELLSWORTH, of Hot Springs, Ark., to SARAH E., eldest daughter of Dr. C. H. Van Patten, of San Jose, Costa Rica, formerly of Washington, D. C. No cards.

The Editors congratulate.

The Central Illinois Medical Society

Met in regular session in Bloomington, January 14, 1873. Society was called to order at 10 A. M. by Dr. J. Wright, President.

On motion, the reading of the minutes of the preceding meeting was postponed till the afternoon session.

On motion of Dr. Laughlin the regular order of business was suspended and the society proceeded to the election of the following members, recommended by Dr. R. G. Laughlin:

T. F. Worrell, M.D.; J. L. White, M.D.; D. L. Crist, M.D.; D. C. Moore, M.D.; H. C. Luce, M.D.; N. B. Cole, M.D., of Bloomington, and W. L. Pollock, M.D., of Heyworth.

On motion, adjourned till two P. M.

AFTERNOON SESSION.

Called to order by President Wright.

Minutes of previous meeting read and approved.

On recommendation of Dr. Laughlin, L. Asire, M.D., of Bloomington, and J. Little, M.D., of LeRoy, were elected members of the society.

On motion, Dr. J. J. Starkey, of Louisville Medical College, was invited to participate in the proceedings of the society.

Dr. W. Hill, of committee on surgery, made a valuable and very interesting report on lithotomy, criticising very severely some of the modern modes of operating.

Recommended by Dr. Tenney, Dr. Lee Smith, of Rush Medical College, was elected a member of the society.

Dr. S. H. Birney, chairman of committee on obstetrics and diseases of females, read a very interesting essay on diseases of females. The production was a valuable one, and of great credit to its author.

On motion, Dr. Hill and Dr. Birney were requested to furnish copies of the reports for publication in the Chicago Medical Journal.

On motion of Dr. Laughlin, the publishing committee were instructed to have one hundred copies of the constitution and by-laws printed.

Delegates to State Medical Society.—Drs. S. H. Birney, W. G. Cochran, C. T. Orner, and W. L. Pollock.

Delegates to American Medical Association.—Drs. H. C. Luce, C. Goodbrake, S. H. Birney, J. Little, G. W. Barton, John Clouser, and W. Hill.

On motion, adjourned till seven P. M.

EVENING SESSION.

Called to order by Dr. Wright, President.

Dr. Laughlin, chairman of the committee on practical medicine, made a practical and very interesting report on the diseases prevalent in this country since the last meeting of the society. The report enlisted a lively discussion, and the doctor was requested to furnish copies for publication in the Chicago Medical Journal.

Dr. J. L. White, of Bloomington, delivered a very interesting address. Although prepared for the public it was very interesting to the society, and a vote of thanks was tendered the doctor for his valuable production.

The President announced the following special committees:

Surgery.—Drs. H. C. Luce, C. Goodbrake, and S. H. Birney.

Practical Medicine.—Drs. J. T. Pearman, Z. H. Madden, and G. W. Barton.

Obstetrics and Diseases of Females.—Drs. M. S. Brown, A. P. Tenney, and J. H. Potter.

Pathology—Dr. C. T. Orner.

Microscopy.—Dr. R. D. Bradley.

Eye and Ear.—Drs. N. B. Dole, H. C. Howard, and R. H. Huddleton.

Committee of Arrangements.—Drs. S. H. Birney, J. T. Pearman, and H. C. Howard.

Very interesting verbal reports were made by Drs. Worrell, Orner, and others.

The following resolution was unanimously adopted:

Resolved, That the thanks of the society are due to the committee of arrangements, the physicians of the city, the authorities of the county, and the trustees of the First Methodist Church, for kind care and hospitalities shown us while meeting within their midst.

On motion, the Secretary was instructed to furnish copies of the proceedings for publication in the county papers.

On motion, adjourned to meet in Champaign the second Tuesday in June, 1873.

Notwithstanding this was the first meeting of the society since its organization, it was well attended and the greatest interest manifested. We expect, however, to have a still more interesting time at our next meeting in Champaign, where we hope to meet all the physicians of the central portion of the State, and *every one* surcharged with "medical news."

W. G. COCHRAN, *Sec'y.*

THE

Chicago Medical Journal.

A MONTHLY RECORD OF

Medicine, Surgery and the Collateral Sciences.

EDITED BY J. ADAMS ALLEN, M.D., LL.D.; AND WALTER HAY, M.D.

VOL. XXX. — MARCH, 1873. — NO. 3.

Original Communications.

ARTICLE I.—*Civil Malpractice. A Report presented to the Military Tract Medical Society, at its Fifteenth Semi-Annual Meeting, Jan.* 14, 1873. By M. A. MCCLELLAND, M.D., Knoxville, Illinois.

(Continued from page 97.)

To emphasize the danger attending the use of the "initial" bandage, the following case is in point:

Steele v. *Newton:* Superior Court of Cincinnati, Nov. Term, 1856.

This was an action to recover damages for improper treatment of a fracture of the lower end of humerus. Damages laid at $3,000. The defendant was an "Eclectic" practitioner of Cincinnati; and the Editor of a work entitled "Symes' Principles and Practice of Surgery," from which this case is quoted. "When stripped for inspection, it was found that motion of the elbow-joint was perfect. There was a visible decrease in the muscles of the forearm and partial contraction of the fingers. He stated that he sometimes scratched his hand so as to make it bleed without being aware of the injury. The contraction of the fingers was not more than is customary with those who walk with the hands swinging by the side."

Prof. R. D. Mussey, testified, "that he found the arm withered, and the general sensibility much impaired—results arising from diminished innervation. He inferred that the blood-vessels had been too much constricted by the bandages, thus obstructing the proper circulation of the blood in the limb. These results might have been induced by injury to the median nerve, but thinks the circulation was obstructed, and in consequence the blisters appeared. Fractures in the lower end of the humerus are very difficult to treat, and for which there is a variety of plans. He should have kept the forearm flexed on the upper-arm, at a right angle, and have been careful not to dress it too tightly. He should use some sort of a splint, though he could not at present specify the exact kind. He was of opinion that, if a fracture had existed in the case, it was probably an oblique fracture including the internal condyle. The elbow-joint is now in good condition, having its natural motion in all directions. He has not, however, seen similar results from such a fracture. The ulnar nerve, as well as the median, may have been injured."

Cross-examined.—He was not positive as to the direction of the fracture, nor was it always easy to judge so far as to form a positive opinion. All fractures of the os humeri, running into the elbow-joint, are difficult of cure. He was of opinion that a permanent injury, or a degree of deformity, is sustained in a majority of cases. The vesications in this case may be accounted for by the injury done to the nerves, but thinks that tight bandages are oftener the cause of such results. He has seen cases similar to this—had seen a case some years ago, where the forearm mortified in consequence of having been too tightly bandaged. Thinks that in this case the dressing may have been too tight. He was of the opinion that partial paralysis might be induced by too tight dressing, without gangrene necessarily ensuing. Erysipelas may follow such injuries, exhibiting itself in from twenty-four to seventy-two hours.

Prof. Jesse Judkins, testified, that wasting or withering may be a result of muscular changes or of nervous sympathy. If there had been a fracture of the arm, the reparation had been most complete. Was of the opinion that the inflammation had been very intense. The capillary circulation may have been arrested by too

tight bandages, the result of which would have been inflammation, erysipelas and gangrene. Injuries of the elbow-joint are always attended with complications, the nature of which *cannot* be always easily determined. The erysipelas complained of was, in all probability, induced by too tight bandages. The surgeon should see such a patient at intervals ranging from two days to one week.

Cross-examined.—Does not think that the injury of the median nerve alone caused the difficulty here presented. Thinks the bandages might have caused the erysipelas. Bandages cannot be put on tight enough to paralyze, without producing gangrene. He thought that a majority of fractures of the elbow-joint were completely cured. When elbow-joint fractures are complicated, the majority were not cured completely.

Prof. T. Wood, testified, that he thinks present condition of the arm is the result of bandages too tightly applied. Could not discover evidence of there ever having been a fracture. Never met with such a result as this, except it had arisen from bandages too tightly applied. The median nerve did not supply all the fingers. He thought that the purple color of the hand, as testified to by plaintiff, arose from compression; the blistering being one of the first results of such compression. Paralysis may be induced without gangrene. No injuries of the elbow-joint are so completely cured as to leave no trace of them. Had known wasting of the arm to occur where the bone had sustained no injury.

Prof. G. C. Blackman, testified, that he had examined boy's arm and had heard his statement, but from those sources had formed no positive opinion. The paralysis may be the result of the shock sustained at the time of the accident, or it may be the result of too tight bandaging, or from having retained the arm too long in one position. The blisters common to such fractures may follow in less than twenty-four hours where there is no dressing, and may be the result of the violence done to the soft parts at the time of injury. If erysipelas was, at the time, epidemic, it would almost certainly follow as one of the phases of such a case as the one under consideration, or even a less injury. He had no positive proof that the arm had been fractured, but he thought there had been a fracture of the humerus, involving the inner

condyle and injuring the ulnar nerve. These are bad fractures, and their true character is difficult to detect. He thought that the ends of the bones should have been put together immediately, inflammation or not. The bandages in such oblique fractures must be tied rather tightly, and the surgeon may use either the wooden or paste-board splints. Had known mortification occur in twenty-four hours from tight bandages. The blisters may have been the result of such bandages.

Cross-examined.—Could not say that the bandages in this boy's case had been too tight. In such fractures it is very common to have impaired motion. The experience of the oldest and ablest surgeons in both Europe and America show this to be the case. Prof. Hamilton shows that a majority of such cases are attended with permanent injury of some sort, and all authors on the subject testify that an impaired condition results in a large majority if not in all cases. Conditions might arise which would cause him to remove the bandages entirely, as severe pain, inflammation, etc. He considered the repair in this case very perfect, and he had seen greater paralysis arise from less injuries.

Prof. R. S. Newton, the defendant in the case, testified, that he was a Professor in the Eclectic Medical Institute and Surgeon to Newton's Clinic Institute. On the day set forth in the declaration saw the boy, Steele, with his arm broken. Humerus broken off obliquely, the end of the bone driven down into the hollow of the arm. Boy suffering very much. Could distinctly feel the end of the bone. Had experienced but little difficulty in setting it, but it was not so easy to keep it in proper position, there being a constant tendency to slip down; hence, to prevent this, the bandage had to be applied firmly. The arm was much swollen at the joint, and all the blood vessels of the arm seemed to be engorged, though not more than an hour had elapsed since the accident. He first drew the point of the bones together and then bandaged the arm from the hand up, afterwards applying the splints, leaving the arm flexed at right angles. In this case more pressure was needed than in simple transverse fracture, on account of its obliquity. Visited boy next morning with Dr. Freeman. Boy complained of arm hurting him; on removal of dressing found arm blistered, part of the arm and hand was of a darkish red, but

there were no indications of gangrene. He said to Mrs. Steele that it was a bad fracture, and that he would hold the arm till she could get her family physician or another surgeon, unless she would assume the responsibility of the case. She told him to go on and do the best he could. He had explained to her the dangers of such a fracture. After puncturing several of the blisters, he reapplied the bandages, and then put on two splints; one on the inside and one on the outside of the arm. The bandage extended from the ends of the fingers above the fracture, the hand being bandaged straight. One of the splints was removed in a few days. When the long wooden joint splint was off the inside, he had an elastic splint on in its place, and a long wooden one on the outside. He treated the blisters with water dressings and continued the splints four weeks or longer. The arm became offensive about one week after the accident. Had the boy under his care about seven months. Had treated the case as a charity patient, never having made a charge against Mrs. Steele on his books.

Prof. A. H. Baker, testified, that the erysipelas spoken of was a result of inflammation, and this had been induced by the injury done to the soft tissues. The indications of a fracture in such a young patient may be so completely removed in eighteen months or two years that no mortal man can detect it. The first bandage he considered most important. The practice of Dr. Newton in this case was proper, and such as would have been followed by any judicious surgeon.

Prof. Z. Freeman, testified, that he saw patient next morning after the accident. The hand and arm were purple. There were blisters on the hand and arm. The bandage was not too tight. It was an oblique fracture above condyles. The boy's mother declined calling in any other physician, and both she and the boy requested Dr. Newton to go on and treat the case. The blisters in this case were, in his opinion, the result of the attending erysipelas.

The Hon. O. M. Spencer, in his charge to the jury, said: "It is due to the professional man, who has treated a case in other respects fairly and attentively, that a candid and favorable consideration should be given to the judgment which he may form

of his duty during the progress of that case; otherwise no physician or surgeon would dare to undertake, or be safe in the performance of his undertaking. In a case otherwise doubtful, this consideration alone should preponderate in his favor.

"Upon the whole, gentlemen, we declare that to entitle the plaintiff to a verdict you must be satisfied from this evidence, that the injury of which he complains was not the natural result of the original accident, but was distinctly traceable to the mode of treatment pursued by the defendant; in the adoption and continuance of which he did not apply that skill and care which men of ordinary intelligence and prudence, as physicians and surgeons, would have applied. Should this be your conviction, the plaintiff must recover such damages as will compensate him for the injury sustained, not exceeding the amount claimed. Should it be otherwise, or should you not be able to trace the cause of this injury, or your minds be unable to decide from the evidence whether the defendant has been in fault, according to the rule stated, your verdict should be for the defendant."

Verdict:—"We the jury, find the issue joined for the defendant."

The difficulties the professional witnesses had here to contend with were very great. The conclusion most surgeons would come to in such a case, would be that it was probably the result of absurd bandaging. Certainly no surgeon, except one who had seen all "indications of a fracture in the elbow-joint removed in eighteen months or two years," would thereafter consider "the first bandage" a *sine qua non*.

The only case that came before the Knox County Court of which records have been preserved, is that of *Sherman* v. *Bunce and Morse*. I am induced to present it in this connection, on account of the very just, as I view it, instructions given in behalf of the defendants. It exhibits also the character of those persons from whom we mostly expect suits of this character.

Knox Circuit Court, April Term, A. D. 1858—Action on the Case.

Plaintiff's Declaration: That he suffered a fracture of right leg. That defendants held themselves out as physicians and surgeons; were employed by plaintiff to treat the fracture, and

when the fractured bone should have begun to heal, they, contrary to expressed wish of plaintiff, stretched the broken bone apart, causing much pain, and thus retarded recovery and rendered plaintiff a cripple for a long time, to wit, one year and six months; damages laid at $6,000; shortening about one inch. Doubtless much less, as these kind of people amplify to the utmost possible limit.

The plaintiff swears he is too poor to prosecute said suit, and asks to prosecute said suit without cost. (Affidavit of Plaintiff.)

The instructions of the court (THOMPSON, J.) were as follows:

1. In this case the plaintiff is bound to prove by a preponderance of evidence the material allegation in some one count in his declaration, or he is not entitled to recover at all in this action.

2. Unless the jury believe, from the evidence, that the defendants did not use reasonable skill as surgeons in the treatment of the plaintiff's limb, or that they did not give reasonable attendance to the cure of said limb; and unless the jury further believe that on account of such want of skill or attendance the plaintiff had a worse limb than might reasonably be expected under the circumstances, as proved, then they should find the defendants not guilty.

3. If the jury believe, from the evidence, that under the treatment of the defendants, if such treatment was reasonably skillful, the plaintiff obtained as good a leg as could be reasonably expected under the circumstances, as detailed in evidence, of the condition of plaintiff, and such manner of treatment, they should find the defendants not guilty.

4. The defendants are only bound to use reasonable skill and to give the usual reasonable attendance to their patient in such cases; if they do this and a perfect cure is not obtained, they do not thereby become liable to damages to their patient.

5. If the jury believe, from the evidence, that a perfect cure or adjustment and union of the bones was prevented or retarded by the act of the plaintiff, or by his physical debility, or his scrofulous habit, or his restlessness or his tossing about, or his cough, or by any accidental cause, the defendants would not be liable for any damages resulting from such causes. And if the jury believe, from the evidence, that the leg of the plaintiff was left in an unu-

sually imperfect state, when under the treatment of the defendants, still they cannot find the defendants guilty, unless they believe, from the evidence, that such imperfections did not result from any of the causes above mentioned.

6. A surgeon, when called upon to treat a fractured limb, is not bound to attend all the time in person upon his patient; but he is bound only to call upon his patient at such reasonable times as are customary and reasonably proper among surgeons in such cases.

7. Where a surgeon is employed to treat a fractured limb it is not implied on his part to make a perfect limb, from the fact of such employment, but he must use reasonable skill and give reasonable attention to bring about such a result; and if, after giving such attention and skill, he fails to accomplish it, he is not responsible.

8. In this case the opinion of competent surgeons and physicians as to the skillfulness of the manner of the treatment of the plaintiff's leg, and also as to whether the plaintiff's leg after such treatment was as reasonably good as could have been expected, are to be received by the jury as proper evidence to prove or tending to prove such facts.

Verdict for defendants.

The Statute of Limitations for Illinois requires that "actions for damages for an injury to the person shall be commenced within two years next after the causes of action accrued." *Gross' Statutes.*

I cite twenty-three cases, with causes of action and verdicts. Surgeons will see from these cases the most they have to fear is the cost of their defense.

Howard v. *Grover*, 28 *Maine R.* 97; amputation. The surgeon, for error of judgment, was mulcted in $1,500 damages. *Slater* v. *Baker*, 2 *Wilson*, 250; refracturing a broken leg without consulting patient's wishes. Damages against surgeon, $2,500. *Gallaher* v. *Thompson*, *Wright's Ohio S. C. R.* 466; fractured leg. Verdict for the defendant. *McCandless* v. *McWha*, 22 *Penn. R.* 261. *Livingston Law Mag.*, *June*, 1855; fractured leg. Verdict in lower court against the surgeon, for $850. Judgment reversed, and sent back for a new trial. *Leighton* v. *Sargeant*, 7 *Foster*, 460. Verdict

for plaintiff, $1,500. Judgment reversed. The above five cases are cited in *Elwell's Malpractice.*

Landon v. *Humphrey*, 9 *Conn.* 209; vaccination. Verdict against surgeon. *Long* v. *Morrison*, 14 *Ind.* 595; patient died under treatment; disease not given. Against surgeon. *Peck* v. *Martin*, 17 *Ind.* 115; child under treatment, became insane. Verdict against surgeon. *Cochran* v. *Miller*, 13 *Iowa*, 128. Case went up on admission of testimony and instructions to jury. Nature of the case not given. Verdict against the surgeon. *McMillen* v. *Hewett*, *Sprague* and *Rodman*, *Elwell's Malpractice;* iritis. For the surgeon. *Holt* v. *Breck*, *Elwell's Malpractice;* incised wound. Never came to trial. *Grinnell* v. *Riggs;* false joint in fractured arm. For surgeon. *Med. and Surg. Report*, *July* 20, 1861. *Gattie* v. *Halford*, *London C. of Exch.;* using instruments in labor, without assistance. For the surgeon. *M. & S. Reporter*, *Aug. 3rd*, 1861. *Russell* v. *Wardner;* broken fore-arm. For defendant. *Ibid*, *May* 20, 1871. *Ordway* v. *Haynes;* fractured thigh. For the surgeon. *Ibid.* Of five cases, all in Middlesex Co., Mass., none of the plaintiffs received a single cent. In one case a verdict was obtained against the surgeon on the testimony of a "natural bonesetter," the judge being a warm admirer of said "bonesetter." *Welch* v. *Sayre;* scrofulous abscess of hip. Plaintiff averred that Dr. Sayre had punctured the hip joint in opening the abscess. Verdict for the surgeon. *N. Y. Med. Jour.*, *vol. xi*, 581. *Haire* v. *Reese;* simple contusion of the hip, followed by "interstitial absorption of the neck of the thigh bone." For the surgeon. *Ibid*, *vol. xiii*, 124; *Med. Times*, *Dec. 1st*, 1870. *Fisher* v. *Gross;* secondary hemorrhage. For the surgeon. An attorney was found in this last case who agreed to pay all expenses and to give his services beside, the consideration being a certain per centage of the damages. *Med. Record*, *vol. vi*, 133.

The union of "*shyster*" and "*quack*," are frequently met with in suits for malpractice.

NEGLIGENCE AND SKILL FROM A MEDICAL STAND POINT.

We shall limit ourselves, in discussing the matter of skill and negligence, from the medical stand-point, to the consideration of fractures, dislocations and amputations, these forming the larger

number of the cases that come into courts for adjudication. What do our eminent teachers say in regard to these questions?

Diagnosis.—The first duty the surgeon has to perform, when called in case of accident, is to determine the nature of the injury. Is it a bruise, a sprain, a dislocation, or a fracture? In injuries near joints, the diagnosis will be, often, most difficult to make. The rapid effusion and consequent swelling that takes place, will tax the surgeon's skill to the utmost, especially when the injury is near the shoulder, the elbow or the hip joints. The points claiming the particular attention of the surgeon relate to deformity, shortening or lengthening, preternatural mobility, or immobility and crepitus. The recognition of deformity will be made out by the eye taking the uninjured limb for comparison. It may be necessary to use the "touch" as an aid to the sight, but in this as in all other manipulations the surgeon should exercise the greatest gentleness. It is no mark of surgical attainment to handle a broken limb roughly, neither is it necessary, and the surgeon who does so, could be easily held to a charge of unskillfulness. *Hamilton Fract. and Dis., 3d ed., p. 34, et sequentes.* The statement above should be qualified by "*as a rule*," for there, undoubtedly, are cases in which, for the best interest of the patient, the surgeon would be justified in manipulating the injured limb throughly and for some length of time, indeed he would be obliged to, before he could come to anything like a correct conclusion in the case. *Gross' System of Surg., Vol. 1, 3d ed., p. 860.*

Difference in the relative length of the limbs is to be determined by careful measurement. In fractures of the femur, measurement should always be practiced, not once only, but every day, or as frequently as the surgeon may deem it necessary, in order to determine that his dressing is fulfilling its purpose in keeping the broken bone to as near its proper length as the nature of the case will permit.

Preternatural mobility is a sign, present in all fractures, *except impacted*, and should be carefully looked for by the surgeon. Not so important as crepitus, yet being always present it is scarcely less important.

Crepitus, that grating sound *heard* not only by the ear but also *felt* by the hand of the surgeon, is the most valuable of the com-

mon signs, but unfortunately it is not always present. The ends of the broken bones may be impacted, as often happens, near the joints, which, with the great amount of swelling, so obscures the nature of the accident that eminent surgeons have been frequently led into error.

Prof. Hamilton, (*Fract. and Dis.*, 3*d ed.*, 34,) speaking of general diagnosis says: "Valuable and important as is crepitus in its relations to differential diagnosis, unfortunately it is not always present, and for reasons that must be plainly stated. First: we cannot, in a pretty large proportion of cases, bring the broken ends again into apposition. Whatever mere theorists may say to the contrary, and notwithstanding surgeons up to this time have rarely ventured to allude to this subject, the fact is so that we do not "set" broken bones. We do not, even at first, bring them into complete apposition, unless it is the exception. I speak of bones once completely displaced by overlapping, and these constitute the majority of examples which come under the surgeon's observation. Second: in transverse fractures of the patella, and in fractures of the olecranon and coronoid processes of the ulna, of the coracoid and acromion process of the scapula, and in all similar detachments of processes and apophyses, the action of the muscles, by displacing the fragments, prevents crepitus from being readily produced. Third: in a few cases, such as certain fractures of the neck of the femur, of the neck and head of the humerus, etc., the broken ends are impacted, or so driven into each other as to forbid the production of motion and crepitus; or they may be simply denticulated, and the consequences, so far as crepitus is concerned, will be the same."

We may remark here, that the diagnosis of dislocations is often made with the greatest difficulty, and may not be made correctly at all, from the great amount of swelling that almost instantly supervenes. Sir Astley Cooper remarks, (*Dis. and Frac., Am. ed.*, 319,) when speaking of the signs of dislocations of the humerus—and the remarks are equally applicable to fractures of the humerus near either end—that, "but a few hours make the appearances much less decisive, from the extravasation of blood, and from the excessive swelling, which sometimes ensue; but when the effused blood has become absorbed, and the inflammation has subsided, the

marks of the injury became again decisive. At this latter period it is that surgeons of the metropolis are usually consulted; and if we detect a dislocation which has been overlooked, it is our duty, in all candor, to state to the patient that the difficulty of detecting the nature of the accident is exceedingly diminished by the cessation of inflammation and the absence of tumefaction. It may also be observed that there is great difference in the facility with which the accident is discovered in thin persons of advanced age, and in those who are loaded with fat, or who have, by constant exertion, rendered their muscles excessively large." He remarks, previously, in his general observations on dislocations, that "it must be borne in mind that where fibrinous effusion has taken place, as generally happens in inflamed joints, we may have sounds that no skill can determine the nature of, especially in such cases as above described." See also, *Ashurst Princip. and Prac. of Surgery*, 270–1.

The chafing sound, which is frequently present in dislocations and inflamed joints, resembling the crepitus of fractures, will often lead the inexperienced, and sometimes the experienced, into error. If, however, the surgeon applies his differential tests carefully, he should not and would not be held liable to damages for such errors of judgment.

Dislocations, as a rule, are characterized by preternatural immobility, and when reduced do not need support to retain the bone in position. Observation of the above characteristics will carry the surgeon safely through, unless there be both fracture and dislocation, in which case the difficulty in diagnosis will be most annoying.

The following case illustrates these difficulties well. By the kindness of the patient, I am able to present him for examination at this meeting.

W. J. Adams, dentist, age 25, was thrown from a horse, Nov. 21st, 1872. Saw him within three-quarters of an hour. The force of the fall was received on the left forearm and arm. The chief injury was located in and around the elbow-joint. Found him with the forearm flexed at a right angle; elbow very much swollen; no particular difficulty in extending the arm or flexing it; pronation and supination not more impaired than they would be from

pain and the swelling of the muscular tissues. The patient was quite faint from shock; rotation of head of radius could not be felt on account of tumefaction; in extended position, rotation developed crepitus. Passing fingers up the ulna discovered a depression about an inch and a quarter to an inch and three-quarters below point of olecranon; flexion of the arm increased this depression somewhat; there was a sharp projecting edge on upper fragment, which was quite prominent when forearm was flexed. Diagnosed fracture of the olecranon process at its base.

Never having seen a fracture of this part, in my own experience or the experience of others, and carrying in my mind that there was a difference of opinion as to the position in which the arm should be dressed, I went to my office to prepare a splint and consult my authorities on the subject. The weight of authority being in favor of the straight position, it was so dressed, on a long tin gutter splint applied to front of the arm, secured by a roller bandage figure of eight around the joint. This dressing was continued till the afternoon of the 23rd, when, at patient's request, it was left off for a few hours. The patient had found it necessary, on account of the swelling and pain, to cut the figure-of-eight bandage several times since first dressing. The arm was dressed twice a day for the first three or four days. While the splint was off, had him apply water dressing, of such temperature as was most agreeable, arm being kept in extended position. Had the arm wet frequently since the first dressing with camphor spirits, tinct. arnica, etc. The swelling commenced subsiding by the 24th, the pain being much less. There was by this time a very great amount of ecchymosis developed upon the inner and upper portion of the arm as high as the axilla. I had told patient that at the end of third week I would put in practice passive motion. Patient went to another county the third week (20th day) of the treatment, and did not return for about ten days. During his absence several surgeons saw the arm and thought it was doing well. When I next saw him, the swelling had in a great measure subsided; there was some ability to flex and rotate the arm by means of the other hand. There was, at this time, and there continues to be, that grating sound, resembling crepitus, which I refer to inflammatory exudations. The fragments appear

to have become united with but little separation. There is a slight excess of projection in the vicinity of the outer condyle or perhaps as low as the head of the radius. This, doubtless, is the displaced fractured external condyle. The depression at seat of fracture is easily recognized; both flexion and rotation under passive and active exercise seems to be improving.

The difficulties here presented were—1st. Danger of separation of fragments. This I prevented by dressing the arm in the straight position. 2. The fracture being so low down, the joint might be implicated, and there would be permanent anchylosis from osseous deposit in the joint. 3. Fracture so low down that head of radius would be intruded upon by callus, and so rotation impaired. 4. Dislocation of head of radius backwards or outwards, or fracture of the same. 5. Fracture of external condyle. As will be seen from history of the case, the backward dislocation was eliminated by the ability to flex and extend the forearm easily, also the ability to rotate forearm. An outer dislocation was eliminated by same tests; fracture of condyle not evident, on account of swelling; and all were ignored from a general absence of deformity. The crepitus of fracture was referred entirely to the olecranon process.*

From all this, we may, therefore, conclude, that, as "diagnosis is a science of probabilities," the surgeon who faithfully considers these tests, and promptly applies them to the elucidation of his case, has skillfully performed his duty in diagnosis.

Skill.—What constitutes skill in treatment? The indications are, first, to put the bones in as near apposition as possible; secondly, to keep them in this position; thirdly, keep down or allay spasm and undue inflammation; and fourthly, the management of the accidents that may occur during treatment. The first indication is accomplished by gentle extension and counter-

* The joint was critically examined by Dr. Hamilton, of Galesburg, who thinks there was probable fracture of external condyle, with fracture of olecranon. In this opinion, Drs. Reece, Nance, Phillips, Aldrich, Purdum, Webster, Hurd, Babcock, Maxwell, Nelson, McCutchan and other gentlemen of the society concurred.

Drs. Hamilton and Reece favored the use of an anæsthetic and a judicious amount of force to bend elbow at right angle.

All the other gentlemen advised severe passive motion, either with or without an angular-jointed splint, with thumb-screw to procure gradual flexion.

extension, with pressure at the seat of the fracture; the second by splints, bandages, and a continuance of the extending and counter-extending force; the third by anodynes, water-dressings, etc. Let me call the especial attention of the surgeon to the danger of using the primary or initial bandage. Notice how many cases come into courts, in which this is one of the apparent causes of trouble. The older surgeons were in the habit of applying this dressing to a broken limb before applying the lateral splints. The object to be obtained by it, *i. e.*, support of the muscles and thus prevention of their contraction, and the protection of the limb from direct contact with the sides of the splints, are desirable. The same objects can be accomplished, as well, by properly padding the splints, and by the use of the roller bandage in retaining them. The danger of so ligating the limb as to occasion congestion, inflammation and gangrene, is so great, by such dressing, that the surgeon would hardly be held "not guilty," who should use it. I would here, therefore, enter my earnest protest against the use of this dressing. In my first case of fracture of the leg, another surgeon, presuming on his *seniority* in practice, applied such a dressing, contrary to my objections, the sequence of which was a narrow escape from a suit for malpractice. The writer was exonerated from blame in the case inasmuch as he had two *intelligent friends*, who were witnesses to the protest.

Dr. Ashurst remarks (*Princip. and Prac. of Surg.* 223–6): "CIRCULAR COMPRESSION is to be carefully avoided, as swelling is inevitable after a fracture, and the risk of gangrene from this cause is by no means only theoretical. Hence, as a rule, in the early stages of fractures, *no bandages should be applied beneath the splints.* Gangrene is the most serious accident which can be met with in the treatment of a simple fracture, and may be due either to arterial obstruction at a point above the seat of fracture, to venous obstruction due to swelling of the part, or to too tight bandaging, or to a combination of these causes. With regard to tight bandaging it is to be remembered that a bandage may be sufficiently loose when applied, and yet in a few hours may become the cause of great constriction from subsequent swelling of the limb; hence the importance of not *applying a bandage beneath the splints;* it is, as remarked by Mr. Ericksen, almost invariably to a neglect of this rule that the occurrence of gangrene from the pressure of a

bandage is due. Especially is this true in the case of the forearm, in fractures of which part this accident most often occurs. It should not be forgotten, however, that this accident may be partly or entirely due to arterial obstruction, which is, of course, an unavoidable occurrence; hence we should not be too hasty in accusing a fellow-practitioner of malpractice on account of such an accident, for it may be really due, at least in some measure, to causes entirely beyond control. The *treatment* of gangrene occurring under such circumstances must vary according to its nature and extent; if it be due to constriction, and the surgeon fortunately discovers it in time, he must instantly remove the bandages, when possibly the patient may escape with superficial sloughing. If complete gangrene has occurred, amputation of course becomes necessary; if the disease show a disposition to self-limitation, the surgeon may await the formation of the lines of demarcation and separation, but if the gangrene be of the rapidly spreading traumatic variety, immediate removal of the limb must be practiced at a point above the furthest limits of the disease."

Dr. Ashurst, in speaking of the reduction or "setting" of fractures, says that "it consists in replacing the fragments by manipulation as nearly as possible in their normal position as regards each other. I say advisedly, 'as nearly as possible,' for I believe with Prof. Hamilton, that it is only in exceptional cases that the displacement of fractures can be entirely overcome."

I have been induced to quote thus largely from Ashurst because he is one of the latest writers on the subject, and stands high as a teacher and practitioner. To him and to Prof. Hamilton, the profession owes a debt of gratitude for the *honest* statements they have made, in respect to the conditions that obtain in the matter of fractures.

The next question that claims our consideration is, when should a fracture be reduced—immediately, or not till the inflammatory action consequent upon the injury has been subdued? "No greater absurdity and cruelty are conceivable than leaving the fracture unadjusted." *Liston's Elements of Surg., Am. ed.*, 581. "Five good reasons why broken bones should be reduced as soon as possible: 1, when the injury is recent, the muscles offer less resistance; 2, their resistance is increased not only by reaction but

also by actual adhesions between their fibers; 3, effusion distends both the muscles and the skin, and compels the limb to shorten; 4, the constant goading of the flesh by the sharp points of the broken bones increases the muscular contractions; 5, the patient will submit readily to manipulation and extension at first, but after the lapse of a few days it is very seldom that he will permit the limb to be in any manner disturbed, even if he is assured that his refusal entails upon him a great deformity." *Hamilton Frac. and Dis.*, 3*d ed.*, 44, *et seq.* "It appears singular that upon a subject so clear as this there should be any difference of opinion. It certainly requires no great knowledge of the nature of accidents to discover why such cases should receive the earliest possible attention: as long as the ends of the fragments are permitted to remain apart, their tendency inevitably must be to excite spasm and inflammation, thereby increasing the suffering of the patient and retarding his cure." *Gross, vol.* 1, 865. "As a broken bone is a constant source of irritation to surrounding parts, and the periosteum is liable to be separated to a greater extent in proportion to the spasmodic motion of the muscles, it is singular that any doubt could exist as to the advantage of setting a fracture as soon as possible." *H. H. Smith, Op. Surg., vol.* 1, 540. "Reduction should be effected *as soon as possible*, for the reason that it is much easier for the surgeon and much less painful to the patient, if done before the development of inflammation; if, however, the patient, is not seen until a later period, or if displacement should, from any cause, have recurred, the surgeon need not hesitate at any stage of the case to effect as perfect a reduction as he can, for the slight additional irritation thus produced will be of much less consequence than the evils which would result from continued displacement." *Ashurst Princip. and Prac. Surg.*

Failure to reduce a fracture promptly would constitute negligence, which we shall consider more in detail, when we come to treat of the accidents liable to occur during the cure of a fracture.

(To be continued.)

ARTICLE II.—*Annual Report of the Section on Obstetrics and Diseases of Women and Children of the Chicago Society of Physicians and Surgeons.* DEPARTMENT OF GYNÆCOLOGY. Read before the Society, December 9, 1872, by A. REEVES JACKSON, M.D., Chairman of the Section.

In the report on Diseases of Women which I have the honor to present to the Society, I have endeavored to bring together such subjects of interest and importance as have appeared during the present year in the various periodicals to which I have had access, with the view of showing, so far at least as the current literature represents it, the existing state of the science. In doing this, I have refrained from introducing any comments of my own, believing that the Society would much prefer having the opinions of those who are now prominent in our own and other countries in this department of practice.

Neither has there been any attempt at systematic arrangement of subjects. I have taken them just as they occurred to me, and have done nothing more than simply group together such as were of the same or a similar character.

DILATATION OF THE OS AND CERVIX UTERI.

Dr. Atthill, in Braithwaite's Retrospect for January, 1872, says, "Whenever you meet with a case of menorrhagia in a woman who is *otherwise unhealthy*, which a careful vaginal examination proves not to depend on ulceration of the os and cervix uteri, or an extra-uterine polypus, or cancer, or such evident cause, it is a manifest duty to dilate the cervix and os internum with the view of determining the condition of the interior of the womb."

Of the two methods of doing this, viz., the one by the use of sponge tents and the other by means of the sea tangle, he prefers the latter. The mode adopted by him is the one first introduced by Dr. Kidd, of Dublin. It consists, first, in exposing the os uteri by means of the duck-bill speculum, and drawing down the uterus with a small hook inserted into the anterior lip. Several pieces of sea tangle bougie, each cut the full length of the uterine cavity, are then to be inserted separately side by side. These are to remain from twelve to twenty-four hours.

In case this does not produce so much dilatation as may be

desirable, the process may be repeated, and if this should also fail, the dilatation may be completed by the use of one of Barnes' dilators.

Dr. Atthill condemns in strong terms the use of any of the metallic instruments which have been suggested for the purpose of dilating the cervix, and asserts that their use is attended with danger, as they act too rapidly and sometimes rupture the uterine fibres, several cases of severe inflammation and even of death having followed their use, while sea tangle is perfectly harmless.

Dr. Grailly Hewitt still prefers the sponge tents for the purpose of dilating the uterine cavity, objecting to the laminaria tents, that they are liable to slip out of place.

MECHANICAL DYSMENORRHŒA.

Dr. Atthill (Braithwaite, Jan., 1872,) states, that there are three varieties of mechanical dysmenorrhœa: 1. That in which the cervical canal is so flexed as to obstruct the escape of the menstrual discharge; 2. That in which inflammation or congestion of the lining membrane exists to such an extent as to cause temporary closure of the canal; 3. That in which there is some congenital narrowing of the os internum of the cervical canal.

He regards the operation of incising the os internum and the cervix, first introduced by the late Prof. Simpson, as proper in the treatment of all these varieties, after the failure of other means, including the dilatation of the canal by the use of sea tangle tents. For the performance of the operation, he gives preference to the instrument of Dr. Savage. It is furnished with two blades, the cutting edge of each being directed outward, but as the back of each blade, when the instrument is closed, projects beyond the edge of its fellow, which it thus overlaps, its introduction into the cervix can be safely effected; but it is generally necessary to dilate the cervical canal before this step can be effected. This is done by the insertion of sea tangle tents, two of which will commonly be sufficient for this purpose. In accordance with the opinion of most gynæcologists, Dr. Atthill limits the use of the hysterotome to the division of the os internum and the supra-vaginal portion of the cervix, and prefers dividing the vaginal portion with a pair of curved scissors.

In order to prevent the incisions from uniting, to which there

is sometimes a great tendency, he mentions the suggestion of Dr. Coglan to insert a thin roll of lead, and of Dr. Grailly Hewitt to introduce an ebony stem pessary. The last named means would, in addition to preventing contraction, also tend to keep the canal straight.

DYSMENORRHŒA AND STERILITY.

Dr. J. Protheroe Smith, (Braithwaite, July, 1872.)

In certain cases of mechanical dysmenorrhœa, there exists simply a stricture of the os internum, with narrowing of the cervical canal and mouth. All accompanying congestion or inflammation being previously removed, Dr. Smith recommends forcible extension by means of a dilator. After preparing the patient by a purgative dose, and by abstinence from all local excitement, and from alcoholic drinks, or much animal food, the uterine canal is accustomed to bear a metal bougie, which should be repeatedly and daily introduced, and increased in size until that of a No. 10 catheter can be borne without any pain. Then the uterine dilator may be safely employed. The instrument he employs consists of two short blades, two and a half inches long, separated by a screw worked with a nut, so as to mark precisely by an index on the handle, the extent of the dilatation employed. This should be used at first cautiously about every second day, always ceasing to turn the screw so soon as pain is experienced. In the course of a few days or weeks at farthest, a forced dilatation to the extent of an inch or an inch and a half may be made with impunity. After this the dilator should be used daily for two or three days, and afterwards at longer intervals, to keep the parts open till they permanently heal in the state of distension effected by the operation.

The results of this treatment are more permanent than that by division of the constriction by means of the hysterotome, which although it gives prompt temporary relief, sometimes produces a firm cicatricial constriction, which is worse than the original disease.

TREATMENT OF SOME FORMS OF MENORRHAGIA.

Dr. Atthill, (Braithwaite, Jan., 1872.)

In cases of menorrhagia, depending on sub-involution of the uterus after labor or abortion after the failure of ergot, gallic acid and similar remedies, we should introduce ten grains of the solid

nitrate of silver as high as the fundus of the uterus, and allow it to remain there and dissolve.

Dr. Atthill effects this object by means of the instrument known as Simpson's *uterine porte caustique;* an instrument which consists of a hollow silver tube open at both ends, in size and shape closely resembling a sound; it contains an accurately fitting flexible stilet. The instrument is introduced to the fundus, the stilet is then withdrawn and the piece of solid nitrate of silver, reduced to the proper size and shape, placed in the tube. It is pushed upwards by means of the stilet until it reaches the end of the tube. This latter is then withdrawn about half an inch in order to guard against the possible forcing of the nitrate of silver into the uterine tissues. This having been done, the caustic is pushed out of the instrument and left free in the cavity of the womb. Dr. Atthill has used this practice several years, and considers it simple, safe and efficient. It produces some pain for a few hours, but he has known no further unpleasant results.

Sometimes a severe form of menorrhagia results from that unhealthy, spongy condition of the os and cervix, in which the mucous membrane lining the uterine canal becomes hypertrophied and thickened, the os uteri patulous, and the lips everted. In order to effect a cure in these cases it is necessary that our treatment should reach every portion of the diseased tissue, which usually extends, at least, as high as the os internum. Two pieces of sea tangle should therefore be introduced and permitted to remain twenty-four hours, at the end of which time they should be withdrawn, and the whole diseased surface should then be cauterized with fuming nitric acid. In a case cited, this caused no pain. In a few days the parts, on being examined, were found in a much healthier state. *The menorrhagia was entirely checked and never returned.* The subsequent treatment consisted in the occasional application of a twenty-grain solution of nitrate of silver to the os uteri, and, at a later period, of a small blister to the sacrum. Finally, the ulceration was entirely removed, and menstruation became in all respects normal.

MENORRHAGIA AND METRORRHAGIA.

J. Matthews Duncan, (Braithwaite, July, 1872.)

Treatment is divided into that which is proper before the loss, and that which is proper while the loss is going on.

The first consists in the use of remedies for any condition which may appear to predispose to, or aid in maintaining the complaint. The second is the chief treatment, and is various in kind. The patient should rest in the horizontal position, and be kept cool. This is applicable to all cases. The application of cold cloths to the abdomen, vulva, etc., or cold water thrown into the vagina or rectum, is a remedy of doubtful value. The vaginal plug, consisting of compressed sponge or bits of lint saturated with alum or perchloride of iron, is sufficient to check the bleeding in most cases. In extreme cases the mucous membrane of the cavity of the uterus may be painted with solution of perchloride of iron. There is nothing worthy the name of evidence to show that the internal administration of the so-called hemostatic remedies, as the mineral acids, ergot, digitalis, gallic and tannic acids, has any considerable effect in checking the flow, but they may be used for the possible good they may do. Ten to twenty drops of the dilute sulphuric acid in infusion of roses, four to eight times daily, is one of the best.

MENORRHAGIA.

J. H. Aveling, (Braithwaite, July, 1872.)

In cases of menorrhagia and leucorrhœa, depending upon simple hyperemy—a word invented by Andral, and defined by him to signify an excess of blood in the capillaries—we should administer arsenic in the form of Fowler's solution, in doses of from two to six drops, three times a day with meals. The dose should be two drops to commence with, and should be continued a fortnight. If at the end of that time no conjunctival irritation should display itself, the dose may be increased to four drops; and then again, after another interval, to six, eight or ten, or even more drops.

The first effect of this treatment is to improve the digestive powers, and the patient's general appearance. The nervous system shows increased tone. The intercatamenial period is gradually lengthened, the amount of the discharges is decreased, and in like manner all the other hyperæmic symptoms disappear.

TREATMENT OF THE PEDICLE IN OVARIOTOMY.

Dr. D. Lloyd Roberts, (Braithwaite, January, 1872.)

No one method of securing the ovarian pedicle is of universal application. If it is long, narrow, and can be easily brought out-

side without traction upon the uterus, or making any undue pressure upon the wound at the lower part of the belly, we should use the clamp; if, on the contrary, the pedicle is short, and there is danger of dragging or too much displacement of the uterus, and if it is not too voluminous, it should be transfixed with a firm ligature, crossed so that it may be tied on one side only, the ligature cut close, and the stump dropped into the pelvis. In cases where the pedicle can neither be safely brought out with the clamp, nor ligatured for fear of vessels retracting or tissues shriveling up; or where the pedicle is very short, vascular and fleshy; or where it is very close to the uterus, it should be secured with a clamp (moderately crushing it), divided, each vessel secured with a ligature, cut short, and the actual cautery applied to the rest of the stump, waiting a few minutes to see if any oozing of blood take place before dropping it into the pelvis. Should the pedicle be very voluminous, the cyst having a very broad attachment to the uterus, so that the clamp cannot be used to hold and crush it while the cautery is being applied, it should be slowly divided with a pair of blunt scissors, each vessel being taken up as it is opened, and the cautery applied to the remaining portion of the stump.

To tie and return the pedicle seems to be the next best mode of dealing with the stump, when, owing to its shortness, the clamp cannot be used. The portion of the pedicle on the distal side of the ligature, surrounded as it is by *warm* tissues, retains its vitality long enough for it to become attached by lymph to the adjacent parts. The ligature, when tightened, buries itself too, and brings into apposition the peritoneal covering on each side of it, and between these adhesion soon takes place.

RETROFLEXION OF THE UTERUS.

Dr. Robert Barnes, (Braithwaite's Retrospect, Jan., 1872.)

Dr. Barnes recommends the treatment of retroflexion by means of the lever pessary, which should be in preference made of vulcanite. The size of the instrument should not be so great as to put the posterior vaginal wall on the stretch, otherwise it will produce pain, and lose the character which a lever should have, of mobility. Any accompanying uterine disease should at the same time receive its appropriate treatment.

UTERINE POLYPI.

Dr. J. Matthews Duncan, (Braithwaite's Retrospect, Jan., 1872.)

Uterine polypi are of three kinds, fibrous, fibrinous, and mucous. The latter are the most frequent.

The constancy of hemorrhage as a symptom of this disease has been greatly exaggerated. In forty-one cases of mucous polypi, nineteen caused no extraordinary loss of blood, while in several there was less than ordinary loss, and in some no discharge of any kind.

The largest losses of blood are produced by true fibrous polypi. In only one of twenty-two fibrous polypi, was there no extraordinary loss of blood.

When the existence of polypus is suspected, and a vaginal examination does not reveal it, it will be necessary to dilate the os uteri. It is very rarely necessary to dilate the whole cervix, this proceeding having been required in only one of sixty-six cases. Dilatation is effected by means of a sea tangle tent, succeeded in twenty-four hours by a larger one, and this again by one still larger, if necessary. The tent, with a string attached to its lower end, to facilitate removal, is seized by a vaginal or throat forceps, and passed into the uterus. In order to keep it *in situ* it is well to introduce a small sponge into the vagina. After the removal of the tent, the index finger of one hand is passed into and through the os uteri, while the other hand, pressing on the abdomen above the pubes, pushes the womb downwards upon the examining finger.

There is nothing simpler than to tell what should be done in a case of polypus. It should be removed.

Mucous polypi, when small, may be removed by torsion, it, or its pedicle, being seized by appropriate forceps and twisted until it separates. If too large for this, and it exceeds the phalanx of a small finger, it is best to clip through the pedicle with curved scissors. The operation may be done without a speculum. Neither is an assistant necessary, although it is better to have one.

The various instruments that have been invented for cutting through the pedicle of a polypus are unnecessary. There is no difficulty in dividing the pedicle by means of a bistoury or curved scissors—the difficulty consists in reaching the pedicle. In cases of enormous polypi, there is difficulty in delivery from the vagina. The perineum is likely to be torn, and sometimes the

laceration extends even through the sphincter ani. Division of the pedicle, even if it could be effected as a preliminary to the operation, would not make any essential difference in this respect.

In these cases Dr. Duncan removes portion after portion of the tumor, in such a way, if possible, as always to leave a convenient bit of the tumor projecting from the remaining part, by which a good hold is got for pulling the tumor further down. So, bit by bit, the whole is removed.

FIBROID TUMORS AND POLYPI.

Dr. Thomas Skinner, (Braithwaite's Retrospect, July, 1872.)

To facilitate removal, the first step is to open up the passages for the introduction of the necessary instruments, and to attain greater certainty as to the position, relations and attachments of the tumor and its pedicle. This is best accomplished by means of sea tangle and sponge tents, and, if necessary, by incising the cervix uteri.

Next, the tumor is to be fixed by means of a vulsellum, or Dr. McClintock's corkscrew, and then transfixed with a cord, or by placing a noose over it. The tumor being firmly grasped, is pulled as low as it will admit of, and the wire or chain of the ecraseur passed over it to its pedicle. In case this latter is so thick and fibrous that it cannot be divided in this manner, our next best step is to divide it immediately above the wire or chain of the ecraseur with blunt-pointed curved scissors, a blunt-pointed curved bistoury, or, best of all, with the polyptome of Sir James Simpson.

In cases where, from any cause, the whole of a fibrous tumor or a fibroid polypus cannot be removed, it is good practice to remove as much of it as possible, as the remainder will frequently thereafter disappear.

The instruments that may be necessary in the removal of fibroid tumors are the following, namely: the uterine sound; wire and chain ecraseur; Simpson's vulsellæ, large and small; Simpson's polyptome; intra-uterine scissors; strong blunt-pointed scissors, curved, for dividing the os and cervix; small uterine syringe, for hemostatic injection; uterine scrapers; polypus crusher; small, narrow midwifery forceps; sponge and laminaria tents, and their guides or introducers; wire and other ligaturing material; sponges; an ordinary pocket case of instruments.

FIBROID TUMORS OF THE UTERUS.

Dr. Alfred Meadows, (Braithwaite's Retrospect, July, 1872.)

Fibroid tumors of the uterus present almost the same histological elements as the uterus itself, viz., smooth or unstriped muscular fibres, bound together with varying quantities of connective tissue.

These tumors are usually not very painful, unless their size be such as to cause pressure on the neighboring organs, or are so situated as to project prominently from the peritoneal surface. A small tumor in this position will often occasion very great suffering, while a patient may have a very large one growing into the uterine cavity, with little or no pain. The pain and hemorrhage are generally in inverse proportion the one to the other, the subperitoneal producing the most pain and the least hemorrhage, while the submucous and interstitial tumors occasion the most hemorrhage and the least pain.

The pain in these cases is best relieved by medicated vaginal pessaries; but inasmuch as the vaginal mucous membrane has no power to absorb fats, cocoa-butter should not be used as the excipient in their preparation. It is much better to use gelatine and glycerine as the basis of the pessary, in the proportion of one part of the former to four of the latter; into this we can put any ingredient we wish, as atropine, morphia, conia, or any other agent of this class.

The hemorrhage is, however, the symptom which we shall most frequently be called upon to treat, and the treatment is, as a rule, most unsatisfactory and disappointing. Ergot, upon the whole, excels in hemostatic properties in these cases. It is more useful where the tumor is interstitial than where it is submucous; it fails, therefore, not unfrequently in the very cases where it is most needed, for it is in the submucous varieties that we get the greatest amount of hemorrhage. Usually it is best to combine the ergot with some purely astringent substance, and when anemia is present, some form of iron. In case it becomes necessary to resort to topical applications, the most effective is the solid stick of anhydrous sulphate of zinc. This is preferable to fluid injections into the uterus, being fully as useful and far less dangerous. It should be passed through the speculum, quite up into the uterine cavity. Dr. Meadows has frequently tried the plan of Dr. Baker

Brown, of freely incising the cervix, for the purpose of curing the hemorrhage, but has not seen any good result from it.

FIBROUS TUMORS OF THE UTERUS.

Dr. L. Atthill, (Braithwaite's Retrospect, Jan., 1872.)

A fibrous tumor may be defined to be a growth composed of fibrous tissue identical in structure with that of the uterine wall, but disconnected from it, being, in general, surrounded by a capsule of dense fibro-cellular tissue, which is perfectly dry and loose, so that when one cuts down on the tumor it almost of itself escapes from the cavity. There are three classes, namely : subperitoneal, submucous, and intra-mural, according as they are found to grow from the peritoneal surface of the uterus, from its submucous tissue, or are developed within the walls of the organ.

The first, or subperitoneal, are beyond the reach of treatment. They do not give rise to menorrhagia, and indeed do not seem as a rule to influence menstruation at all.

The submucous, pedunculated, fibrous tumor is to be treated in a manner identical with the ordinary fibrous polypus.

The intra-mural are of frequent occurrence, and the most important. They nearly always produce menorrhagia, and as invariably stimulate the uterus to enlargement. Medicines without number have been employed with the view of causing absorption of fibrous tumors of the womb. Prominent among these are the bromides. After a full trial, Dr. Atthill has found little good result from their use, and has lost all faith in their resolvent powers in the disease under consideration.

The surgical means that have been recommended and used for their removal are five in number. They are—1. Incising the cervix uteri; 2. Incising the tumor; 3. Cutting into the tumor and destroying a portion of its tissue—a process to which the term gouging has been applied; 4. Enucleation of the tumor; 5. Avulsion, or the forcible tearing away of the tumor from its attachment.

Each of these methods has been used with various degrees of success. The operation of incising the os is founded on the theory of Dr. Baker Brown, "that the division of the os and cervix uteri permits the fibres of the body of the uterus to contract upon the contained tumor, and thereby to compress the vessels and prevent

hemorrhage." Whether this be the true explanation or not, it is certain that the operation is often followed by good results, and in the case of large tumors which are contained within the uterus, and where the cervix is thinned and spread over them, the operation is fully justified. The incising of the tumor has been practiced by Dr. Atlee, of Philadelphia, and Dr. Tracy of Melbourne, and others, with a success which is probably due to the fact that the vitality of these tumors is nearly, if not altogether, destroyed by the incision having divided their capsules, for the fibrous growth itself is endowed with a very low degree of vitality.

Enucleation is practiced by Dr. Matthews Duncan and others, and this gentleman has also practiced with great success the method of avulsion. This consists in seizing the tumor with a strong vulsellum, and forcibly dragging it from its attachments. It is specially suitable for those cases in which spontaneous enucleation has already partially begun, or where that stage having been artificially commenced, has proceeded to some extent.

Dangerous hemorrhage, from the pressure of a fibrous tumor, may be checked by injecting into the uterine cavity—the cervix having been previously dilated—the tincture of iodine or a solution of perchloride of iron.

CANCER OF THE WOMB SUCCESSFULLY TREATED BY BROMINE.

Dr. A. Wynn Williams, (Braithwaite, Jan., 1872.)

Dr. Williams gives the details of four cases of medullary and epithelial cancer of the cervix successfully treated by the injection and application of bromine, twelve drops to one dram rectified spirits of wine. His opinion is, that cancerous growths or formations situated in the lips or neck of the womb can be successfully medicated when confined to this part only, and previous to the commencement of ulceration. The presence of ulceration, indeed, should not preclude an attempt at removal so long as the womb is movable, and the neighboring glands and other parts remain apparently healthy. The mode of proceeding will vary in different cases. The more superficial, as some of the epithelial varieties, will be best destroyed by saturating cotton wool with the bromine solution, placing over it a vulcanite cup or gutta percha. Any stump left must be treated by injection, as the more solid tumors.

The solid growths are best treated by injection of their substance, and for this purpose a small trocar and canula, to which a glass syringe can be attached, answers best.

Dr. Williams' paper, detailing the cases in which he had used this treatment, was read before the Obstetrical Society of London, and was freely criticised, especially by Dr. Playfair, who remarked that Dr. Williams' cases afforded no conclusive proof that they were malignant at all, inasmuch as fixature of the womb, which is the first positive sign of malignancy, did not exist; indeed, in each instance the womb was said to be freely movable. Dr. Williams stated, in reply, that there must be a time in the early stages of the disease, when it was confined solely to the neck of the uterus, and in which the womb was not fixed; such was the case in the mammæ and other organs.

CARCINOMA OF THE UTERUS.

Dr. O. Spiegelburg, (Half Yearly Compendium, July, 1872.)

Dr. Spiegelburg states, that the diagnosis of carcinoma in its first stage may be made with tolerable certainty by the introduction of a sponge tent. If the hardness of the os be owing to a benign tumor or infiltration, it will allow of dilatation; but if it be owing to malignant disease, the tissue will remain rigid and inelastic, even after the sponge has been allowed to remain twenty-four hours.

He recommends the early removal of the cervix, believing that occasionally, though rarely, radical cures are thus obtained. Where the operation cannot be performed at a very early period, he advises merely a symptomatic treatment.

INFUSION OF TOBACCO IN VAGINITIS.

Dr. L. Atthill, (Half Yearly Compendium, Jan., 1872.)

Infusion of tobacco is a valuable remedy in vaginitis, but in using it we should be sure that the orifice of the canal is sufficiently patulous to permit the free escape of the fluid. In some cases where the vaginal orifice is small, the use of the remedy is quickly followed by faintness, nausea, etc. The value of the remedy is greatly enhanced by the addition of two or three drams of borax.

ADVANTAGE OF ELEVATING THE WOMB.

Dr. Cumming, (Half Yearly Compendium, Jan., 1872.)

Dr. Cumming states that sufficient importance has not been assigned to the maintenance of the womb at its proper height. A descent of one inch often produces distressing sensations, and in married women exposes the organ to injury during the sexual act—resulting in tenderness, pain, swelling and ulceration.

For the purpose of elevating the womb, he advises the use of the ring pessary, of as large a size as can be borne. The ring should be compressed into an elliptical shape by tying firmly with tape, a slip knot being used. After introducing the pessary, the knot may be loosened by pulling on the free end. The ring will then resume its original shape, and may then be finally adjusted. Many ulcerations of the cervix get well under this treatment without any local application whatever.

ON THE USE OF CLOTH TENTS.

Dr. Talliaferro, (Atlanta Medical and Surgical Journal for Oct., 1871), publishes an article on the use of cloth tents. In his experience, he had found the sponge and sea tangle too irritating, while from the cloth tents he had found all the good results of the others without the evils.

Cloth tents can be medicated to meet the indication for any case or condition. For *dilating*, their continued use, increasing the size from day to day, they are preferable to other tents, especially where the mucous surface is diseased.

They are prepared by rolling a strip of cloth, of the desired width, firmly between the finger and thumb, regulating the size and length by distance of lap in the roll, and length of cloth rolled into one tent, the strips being about one inch wide.

THE RECUMBENT POSTURE IN THE TREATMENT OF UTERINE DISPLACEMENTS.

Dr. Wm. L. Edgar, (St. Louis Medical Archives, Aug., 1872.)

Dr. Edgar insists upon the importance of rest in bed, in the treatment of displacements, and attributes one-half of the failures to cure these ailments, to neglect of this all-important precaution.

ARTICLE III.—*Unsuccessful Attempt to Remove a Fibrous Tumor of the Anterior Wall of the Uterus—Death from Peritonitis.* By A. REEVES JACKSON, M.D., Surgeon-in-Chief of the Woman's Hospital, of the State of Illinois.

I was summoned to visit Abigail R. Hall, at Janesville, Wisconsin, August 26th, 1870, and obtained the following history :

The patient is forty-seven years of age, unmarried, and has a strongly-marked strumous appearance, with very light hair and complexion. She commenced menstruating at the age of thirteen, the discharge being regular and painless down to the age of seventeen. At that time, in attempting to lift a heavy weight, she felt a sudden pain in the lower part of the abdomen. Subsequently menstruation became habitually profuse, but recurred at regular intervals and was still painless. At the age of twenty-four, in alighting from a carriage, she sprang heavily from the wheel to the ground, and again felt a severe pain in the hypogastric region. A physician who examined her at that time stated that there was prolapsus and enlargement of the womb. Since that occurrence the patient has observed a slowly increasing fullness in the lower abdomen. Menstruation continued rather profuse, and leucorrhœa was present throughout the intermenstrual period. At the age of forty-one she had an attack of pelvic cellulitis apparently, which was followed by a copious discharge of pus through the rectum. Since that event the hypogastric enlargement has been more distinct, and has continued to increase, although not steadily. There have been times when it seemed to become less, and again at others would be attended with so much fullness as to occasion oppression of the breathing. These periods of unusual enlargement were associated with œdema of the lower extremities. The size of the abdomen was always lessened during and immediately after the menstrual flow. From August last to the following November there was no sanguineous discharge whatever, and during that period her general health was notably better than it had been for years previously. From November to March menstruation appeared irregularly at short intervals, and in diminished amount. It then ceased again entirely until three weeks ago—a period of nearly five months—during which time she grew rapidly larger, and the lower extremities became much swollen, the left one especially. Three weeks

ago a sanguineous discharge commenced and continued two weeks, during which time the dropsical symptoms subsided.

The present appearance of the patient is that of a woman who has undergone much suffering. She is pallid, has a rather stooping gait, and a worn expression of countenance.

An examination of the abdomen reveals the presence of a very evident tumor reaching from the navel to the pubic ridge, and traceable into the pelvis. It is firm, smooth, rounded, symmetrical, and non-fluctuating, resembling in shape and position the gravid womb, except in being much harder. In the right iliac region there is a spot that is tender under pressure; with this exception the tumor is painless.

The vagina is small, but presents no other noticeable characteristic. The cervix uteri occupies its normal position, but is shortened, and, the anterior lip especially, much thickened. The os is healthy in every respect. Under conjoined manipulation, with one finger of the left hand pressed against the cervix, and the other hand making simultaneous pressure upon the abdominal tumor downwards into the pelvis and rolling it from side to side, the cervix appears to move consentaneously with the tumor. A probe can be introduced only to the depth of about three-quarters of an inch.

Introduce a sponge tent as far as possible through the os uteri. This is done at eleven o'clock in the evening.

August 27th. At ten o'clock A. M. remove the tent and make another attempt to introduce a sound, with the result of finally passing it in about an inch and a half. In entering, it takes a direction backwards towards the rectum. When in this position motion is distinctly transmitted to its handle through the abdominal wall. I now pass an elastic bougie mounted upon a stout wire into the os uteri, and holding the distant extremity of the wire firmly with one hand, push the bougie onward into the cavity of the cervix with the other. It passes readily in to the depth of seven inches, thus showing the depth of the cavity but not its direction. From the course taken by the sound I suppose this to be backwards, but in order to remove any doubt on this point I introduce a finger into the rectum and distinctly detect the presence of the bougie through the recto-vesical septum. The diagnosis is a fibrous tumor of the anterior wall of the uterus.

I advise the external use of iodine over the site of the tumor,

and internally, muriate of ammonia in ten grain doses three times a day, the treatment to be continued many months; and encourage the patient by telling her that as the climacteric is now at hand, the tumor may diminish in size, or at least prove comparatively innocuous.

November 11th. To-day I visit Miss Hall at the Woman's Home, she having come to the city for treatment.

Her condition has not changed materially since I last saw her. She seems scarcely so well nourished, however, and states that the tumor is more painful, and that hemorrhages have been more frequent and at times very profuse. There is a considerable increase in the size of the abdomen, and the tumor has grown; the latter now extends to a point an inch and a half above the umbilicus, although a vaginal examination reveals no change from her former condition. She has not been able to take the sal ammoniac owing to the fact that it produced nausea. Sometimes she had taken it for three or four days consecutively, but so much impairment of appetite and irritability of stomach followed its use that she was obliged to discontinue it. Iodine in the form of Ung. Iodin. Comp. had been used regularly.

Inasmuch as there is no hemorrhage present, and no other symptom of an urgent character, I conclude simply to watch the case a few weeks before determining the question of surgical interference.

December 12th. The patient's general health is clearly giving way, and it becomes evident that she cannot live under existing circumstances more than a few months. There appears to be no other disease present than the uterine tumor; and the removal of this offers the only hope of warding off the impending result. The patient and her friends are fully apprized of the dangerous nature of the operative procedures necessary for the removal of the growth, and of the unpromising character of the case, and after due consideration decide to have the attempt made. The patient herself is especially anxious, and very sanguine of a successful result.

January 3rd, 1871. During the past three weeks the patient has been taking tonic medicines and using other various means for the purpose of getting her general health in as good condition as

possible prior to commencing operations. Notwithstanding this, however, she has lost strength rather than gained it. The tumor has been the seat of so much pain that she has been able to get very little sleep. Thinking it unsafe to delay any longer I introduce a sponge tent into the os uteri as far as possible.

January 6th. Have introduced a sponge tent every twenty-four hours, the size being each time larger than that of the one which preceded it. Remove the third one to-day, and am enabled to introduce the finger as far as the second joint. The tumor is now felt starting abruptly from the anterior wall of the cervix at a point about one inch above the os uteri.

Introducing a speculum, I divide the cervix, right and left, to within a quarter of an inch of the vaginal junction, by means of scissors. This is followed by pretty copious bleeding, which promptly ceases on the withdrawal of the speculum. Order ten grains of powd. ergot to be given every four hours.

January 9th. The ergot has caused much nausea, but produced no effect upon the uterus. I introduce a long-handled probe-pointed bistoury, guided by the finger, as high as possible through the now widely open os uteri, and make a tolerably deep incision into the capsule of the tumor. A small amount of hemorrhage follows the operation, and it ceases as before on the closure of the vagina. Order wine of ergot instead of the powder.

January 12th. The vin. ergotæ has acted more pleasantly and more efficiently, producing less nausea and exciting pretty severe contractile pains. The tumor and womb have settled lower down in the pelvis. After introducing a finger as a guide into the cervix, I pass an instrument with a concealed knife—resembling an urethrotome—to the highest attainable point, and projecting the blade into the capsule of the tumor, withdraw the instrument, pressing, as I do so, the blade firmly into the growth. In this way I make an incision about four inches long and nearly a half inch in depth. A very trifling amount of blood follows. The ergot to be continued every four hours.

January 26th. On the 21st there appeared a sanious gray and somewhat offensive discharge which contained small threads of putrid substance. The patient's appetite continues fair, but she seems weaker and does not sleep well. Her pulse which lately has been from 90 to 100, has risen to 120, and she is peevish and

fretful—a condition of temper more noticeable from the fact that naturally her disposition is extremely amiable.

I make another incision into the capsule of the tumor, and order a suspension of the ergot, giving, instead, a quarter grain of sulph. morph. with two grains sulph. quinia every six hours; also a glass of sherry wine with each meal.

January 30th. To-day the patient seems better. The grayish discharge is largely increased in quantity and highly offensive. Masses of the now softened and disintegrated tumor have been coming away, and the growth felt through the abdominal wall has become softened in places and imparts a feeling of semi-fluctuation. There is more marked tenderness in the right iliac region, which is greatly increased under pressure. She is less irritable, has slept better, and there is some improvement of the appetite.

February 1st. Was unable to visit my patient yesterday. To-day find her with well marked symptoms of peritonitis. The pulse is small, rapid and sharp; tongue dry and brown; abdomen tympanitic and very tender—the greatest tenderness still being on the right side, respiration short and shallow. Her countenance has a worn, anxious expression, and there is almost constant jerking of the forearms and wrists. She lapses frequently into a condition of semi-consciousness, during which she mutters incoherently.

Order hot turpentine stupes to be applied to the belly, and a quarter grain of sulph. morph. every three hours. Leave her at 11 A. M.

In the evening she is attacked with vomiting and great restlessness, with coldness of the extremities. She dies at half-past nine o'clock in the evening of February 2nd.

The post-mortem examination revealed extensive inflammation of the peritoneum, particularly in the neighborhood of the right side of the womb, involving the right ovary, which was thoroughly disintegrated and covered with lymph and pus. The tumor was found to be imbedded in the anterior wall of the womb, and its substance throughout showed signs of decomposition, especially in the neighborhood of the incisions. The extreme lower portion of the tumor was soft and shreddy and thoroughly phagedenic.

The incisions which had been made before death were now continued to the full length of the uterine canal, and then with

the fingers alone the capsule was peeled off from the tumor almost as readily as one would remove the rind from an orange. The weight of the tumor after removal from its capsule was four and a quarter pounds.

Remarks. Our successful cases are not by any means always the most valuable and instructive, and the case just related has been especially useful to the writer in teaching the necessity of caution in the treatment of uterine fibroids.

The time is not very long past when intramural tumors of the uterus were regarded as wholly unamenable to surgical treatment. And even now operative measures are restricted by many excellent practitioners to means designed to control the hemorrhages which are so frequent an accompaniment of these growths, and which form the chief element of danger. Others, however, have considered it justifiable to employ medical means for their removal in cases where their presence places the life of the patient in jeopardy.

These means for radical cure are now recognized as five in number, namely: 1. Incising the cervix uteri; 2. Incising the capsule of the tumor; 3. Mutilating the tumor by various means—usually termed "gouging"; 4. Enucleation; 5. Avulsion.

The first two named were both used in the case of Miss Hall, and commonly I regard it as best to combine them. The incision of the os uteri is based upon a theory which originated with Mr. Baker Brown that "the division of the os and cervix uteri permits the fibres of the body of the uterus to contract upon the contained tumor, and thereby to compress the vessels and check the hemorrhage." The operation, originally used only for the purpose of checking the bleeding, was found in some cases to be followed by expulsion of the tumor through the enlarged os, and thence came to be used as a means of inducing such a result. Dr. McClintoch, of Dublin, has practiced the operation very extensively, and as he alleges, with a good degree of success.

Incising the tumor has been a favorite operation with Dr. W. L. Atlee, of Philadelphia, for many years, and as early as 1853 he published for private distribution a valuable essay on "The Surgical Treatment of certain Fibrous Tumors of the Uterus," in which a number of cases were detailed in which the plan in question proved successful. In that essay, Dr. Atlee called especial

attention to a fact of great importance in the treatment of patients afflicted with the class of tumors under consideration. It was "*that the excessive hemorrhages which sometimes occur, arise not from the uterus itself, but from the vessels of the membrane which cover the tumor.* And the practice which he based upon this fact was "*During hemorrhage to pass the bistoury along the vagina into the cavity of the uterus, and make a very free incision into the most exposed part of the tumor.*" This appears at first sight to be a startling mode of practice, but from considerable experience I can bear testimony to its efficacy and safety. The incision is followed by a small gush of blood, and the hemorrhage which may have persisted for many days, is almost instantaneously arrested.

The success of this procedure as a radical means of cure depends, doubtless, upon the fact that these tumors are endowed with very feeble vitality, and that it needs but little disturbance to interrupt their nutrition. The proper uterine tissue does not enter into their composition; it is merely pushed aside by the neoplasm, and forms around the latter a covering or capsule. And so loose is the connection between the capsule and the tumor, that when a free incision is made in the former, the contractile power of the uterus is sufficient in many instances to push the tumor through the opening and finally expel it.

There were some circumstances in the case of Miss Hall which caused me to hesitate before resorting to surgical means for the removal of the tumor. They were, the large size of the tumor, the fact of its being the seat of pain, and the failure of the general health. These symptoms were all unfavorable to success. So long as fibrous tumors remain small, hard, painless, insensible to pressure, and do not interfere with any important function of the neighboring organs, or give rise to hemorrhage, they do not greatly impair the general health. And this is the time when they should be removed, provided they threaten to produce these results; for at this time their removal may result in complete cure. But after they begin to soften, are subject to attacks of acute pain, and are tender to the touch—symptoms denoting the degeneration of the growth; and when, in addition to these symptoms, there are also anasarca, ascites, emaciation and pallor, indicating the failure of the general system, it is usually too late for a successful operation.

Now some of these very unfavorable symptoms were present in this case. But it was evident that without interference death was imminent, and there was at least a possibility that an operation might result in cure. I think, too, that I was influenced, perhaps more than I should have permitted myself to be, by the entreaties and hopefulness of the patient. So soon as she learned that an operation offered her any prospect of relief, however small, she begged to have it done. I do not wish to be understood as offering this circumstance as a justification of a course of conduct my conscience did not approve, or my judgment did not sanction; on the contrary, I regarded the operation as justifiable under all the circumstances, and had I refused to interfere and the patient had died unrelieved, as she unquestionably would have done very soon, I should have felt that I had been recreant to my duty.

785 Michigan Ave.

Article IV.—*Compressed Air.* Synopsis of a Lecture delivered before the Rush Medical College Students, Dec., 1872. By J. H. Etheridge, M.D., Prof. of General Therapeutics, Rush Medical College, Chicago.

Gentlemen:—The therapeutical advantages of this agent are being shown to us by a few German and French investigators, and I propose, to-day, to briefly lay before you the results of the labors of one of these gentlemen, Dr. J. Lange, of Dresden, who has kindly sent me his published pamphlets on the subject.

Passing over the preliminary considerations of the subject, I invite your attention to a description of the apparatus used in administering compressed air baths. Due regard must be had to ventilation, and to ability to measure precisely the atmospheric pressure in constructing the apparatus. To meet these ends, the so-called "air bath bells," are constructed of iron sheets welded together hermetically. The bells are six feet in diameter, and eight or nine feet high, provided with a door opening inwardly. In the centre of the floor is a supply tube, connected with the pumps; about four inches above this tube is a circular platform, nearly six feet in diameter, and upon this are placed the chairs for the patients to sit on. The patient takes a seat, the pumps are

set in motion, and air is forced in gradually, almost inperceptibly diffusing itself throughout the bell, its outward pressure shutting the door hermetically, and the platform so distributing it—the air—as to avoid subjecting the individual to a draft.

At the top is a tube leading from the bell, which bifurcates—one arm being opened by a stop cock. Through this cock the air is allowed to pass during the whole bath—thus securing good ventilation. The pumps work constantly, and the pressure is regulated by the stop cock. When it is desired to gradually increase the amount of air-pressure, less is allowed egress through the waste pipe than comes in through the supply pipe under the platform, and *vice versa*. To the other arm of this pipe at the top of the bell, is attached a manometer, which indicates the air pressure within the bell with exactitude.

The bath generally lasts two hours—the first half hour is engaged in bringing the pressure gradually to the maximum—during the ensuing hour, the pressure is maintained without any variation, and during the last half hour the pressure is decreased till the normal standard is attained.

I now invite your attention to the physiological and therapeutical effects of this simplest of all remedial agents. They are really wonderful, and it will not be long before the facilities for administering compressed air baths will be found common enough in large towns.

EFFECTS ON RESPIRATION.

During the bath, the inspiratory acts are notably easier, that is, the power of the inspiratory muscles seems to be increased. The respirations become longer and slower, and connected with them is a sensation of easiness. Both these effects are noticeable in the healthy, but especially are they noticed by those patients troubled with thoracic diseases.

EFFECTS ON THE CHEMISTRY OF RESPIRATION.

Observations on this point are meagre. Up to a certain point of pressure the expiration of carbonic acid goes beyond the normal standard; at a higher pressure the amount of carbonic acid diminishes, and becomes less than in an ordinary atmosphere. An after effect of the bath consists in an augmented expiration of carbonic acid, which continues for some time subsequently,

eventually attaining a maximum, and then decreasing to the normal standard.

EFFECTS ON THE CIRCULATION.

To appreciate the remarkable effects of compressed air on the circulation, you must call to mind some of the forces constantly in play during life. *Outside* of the lungs, yet within the hermetically tight thoracic walls, are the heart and larger vessels. During ordinary *inspirations* these vessels are pressed upon by the outward distending lungs—the venous blood being impeded in its flow, and the arterial flow being promoted. This retarding the one, and promoting the other, is only *slight* in the ordinary atmosphere. During ordinary *expirations*, the mouths of the large veins opening into the thoracic cavity are made somewhat patulous, and this patulous condition produces aspiration, and the capillary blood is *sucked onward* towards the heart. Let me emphasize the fact, that this aspiration is only *slight* in degree—yet it is a small factor in ordinary circulation. In the compressed air bath, the effects of the air on the arterial and venous flow during *inspiration* and *expiration* are greatly increased, and we have, as a consequence, augmented *arterial force* (of flow), and *increased aspiration* at the mouths of the large veins, which aspiration results in an unusual activity and completeness of capillary circulation. Increased aspiration at the mouth of the subclavian causes a more complete evacuation of the thoracic duct.

In the bath, decreased heart pulsations are *never* absent in the healthy, and especially in patients with pulmonary troubles. The rate of decrease is not uniform in all individuals, nor at all times in the same person. At one time the diminution may be four or five beats—at another it may be twelve, fifteen or twenty beats. Bertin had a case of double emphysema, with the pulse at 106 or 108. After the first bath it fell to seventy-two beats—and continued to fall daily thereafter (under daily baths), till it reached forty-five, and there remained for a time, and for a long time thereafter it never went above fifty-six. In cases of lung trouble, where the pulse is too high, the baths always cause a diminution, which is permanent when the cure is established.

EFFECTS ON THE ANIMAL HEAT.

The thermometer always indicates an increase of temperature. When the pressure is diminished the heat is decreased, and the

patient becomes sensible of it. If the pressure is suddenly decreased, heat is suddenly made latent and the air vapor is precipitated in a thick fog. In many instances a disagreeable shivering is experienced in such trials.

EFFECTS ON MUSCULAR POWER.

The power of not only the inspiratory muscles is increased, but that of the whole muscular system, as may be proven by conducting experiments with lifting heavy weights with the hand. Under increased pressure increased amounts of weight can be lifted.

EFFECTS ON THE NERVE CENTRES.

In many persons is aroused a "feeling of spritual well-being, levity and liberty." One author, Tunod, asserts that it produces a flow "of rich ideas, with a tendency to verse making"!

EFFECTS ON TISSUE METAMORPHOSIS.

1*st. Digestion.* The baths always produce invigoration of the digestive function, as is shown by the increased appetite and the greater action of the intestinal offices. Increased aspiration on the subclavian causes increased speed of flow of lymph from the thoracic ducts into it. The thoracic duct is greater pressed upon by inspiration, and the flow of lymph is thereby accelerated.

2*d. Urine.* In most cases the urine is increased in quantity. Sulphates are increased—phosphates continually decrease till they disappear.

3*d. Augmentation of Weight.* This result almost invariably follows the prolonged use of the baths. In one case the weight increased from 154 to 162 pounds in thirty-eight days. In another, from 134 to 144 pounds in twenty-one days.

CONCLUSIONS.

All phenomena observed from compressed air-baths point to the one conclusion, that the nutrition is made more normal and better. All nutrition changes take place in the capillaries. The immediate effect of a bath is to induce capillary movement, such as many parts of certain systems seem to be strangers to, most of the time. The conditions seeming to call loudly for these baths are characterized by poverty of blood, deficient formation of blood, (as seen in chlorosis and in convalescents after debilitating diseases).

Special attention is called to the various thoracic diseases, as treated by this means, and results arising therefrom.

IN CATARRHAL DEAFNESS,

Unpleasant pressure on the tympani is experienced at first in the bath, but swallowing powerfully will equalize the air pressure on each side of the tympanum. Compressed air coming thus in contact with the congested eustachian mucous membrane, exerts a most happy effect on it, and the deafness disappears after a few baths.

IN LARYNGITIS,

Recent cases are almost invariably *speedily* cured by this treatment. Chronic cases are cured more slowly. Singers affected with laryngitis and hyperæmia of the vocal cords, sufficient to prevent vibration, and thus induce aphonia, are readily cured. Cures seem to remain thoroughly and persistently when treated with compressed air.

CHRONIC BRONCHITIS OR CATARRH.

In these cases we have hypertrophy and thickening of the mucous membrane and muscular coat, with a pus like, yellow or tenacious semi-transparent secretion, with loss of elasticity of the mucous membrane and muscular coat, and, therefore, much inclination to distention of the bronchi and to emphysema. Under compressed air baths the secretion is speedily checked, the mucous membrane and muscular coat regain their natural strength, and in most cases the amendment is so magical as to surprise not only the patient but the medical attendant. All these curative processes are effected solely through a bettered nutrition. There is not much hope of cure of sacculated dilatations in this trouble.

IN CONVALESCENCE

From acute bronchitis — especially the capillary form — compressed air is particularly applicable, for two reasons:

1st. To remove the residue of the disease, and the beginnings of sequelæ, as distension and emphysema.

2d. To secure prophylaxis against relapses, which are a prominent feature of after conditions, from capillary bronchitis and ordinary bronchitis.

IN DISEASES OF LUNG PARENCHYMA,

The effects of this agent are astonishing, but especially noticeable are its good results in emphysema. Until observations were made with this remedial agent, idiopathic emphysema was deemed incurable; now, however, we see the patient running up stairs, or ascending mountains, who was once unable to take a few steps on a level without gasping for breath—sleeping in any position at night, when previously the horizontal position would have been death to him; we hear normal sounds in the lung; we find the liver and heart have found their normal position; we find a great diminution in chest measurements, and a disappearance of the "barrel-shaped" chest.

All these changes are effected in a few weeks by baths—changes which no other agent has ever secured in emphysema previously.

TUBERCULOSIS OF THE LUNG.

Deficient nutrition causes tubercle in properly disposed persons. Hyperoxidation restores nutrition in such cases. Under compressed air baths all the bad symptoms of this disease slowly disappear. The spirometer actually shows increased lung capacity. Tubercles become atrophied and calcify, and the soft matters of them become absorbed. Even where vomicæ exist, much good is done by baths. Where interstitial tubercularization exists, no hope can be entertained.

I hoped to have had time to allude to the sparse experiments made in cases of organic heart disease, but I cannot do it at this time. I trust I have said sufficient to convince you that we have an unequaled agent in compressed air, and I hope that the day is not far distant when the baths can be taken in any town of our country, and will be freely used by rational, intelligent physicians.

ARTICLE V.—*Relations of the Integumentary and Generative Organs.* By JAMES N. HYDE, M.D., Chicago.

The exterior investment of the body, including its various glandular, hairy and ungual appendages, is manifestly designed to protect and preserve the structure which it envelops. Viewed in this light alone, it is not obvious that the cutaneous surface has

either an anatomical, physiological or pathological connection with those organs which are concerned in the reproduction of the species. And yet it may be made to appear, from a collation and comparison of well-ascertained facts, that, not only does such a relation exist, but that it exceeds that acknowledged union between each organ of the body and every other, by virtue of which the whole enjoys a symmetrical existence.

In the human fœtus, the germinal membrane of the blastodermic vesicle, soon after the segmentation of the vitellus, subdivides into two layers, which rapidly assume distinctive characters, and eventually give rise to two widely different systems of the living economy. The serous or animal layer is that which is external, and from it is derived the integument, as well as the organs which are essential to animal life. The mucous or vegetative layer is internal, and from it are developed the true viscera and the organs necessary to the continuance of organic life. These two lives are, thus early in embryonic existence, distinctly separated; and, thereafter, as Bichat says: "they may exist, the one independent of the other, though they were, without doubt, intended to be reciprocally supplementary."

Since, then, there is found to be a common primitive source of derivation for each of two distinctly different systems in one individual, it is natural to conclude that we shall discover certain physiological and pathological relations between those organs which are engaged in the fulfillment of the functions of the same life. It has been already seen that the integument is a derivative from the external animal layer of the ovum; let us ask in which of the two lives are the reproductive organs most interested, and whether, either wholly or in part, they are descended from the same embryonic layer.

About the fifth or sixth week of fœtal life an external cloaca can be seen, which is the termination common to the intestines, the uterus and the sexual organs. By the tenth week, the "urogenital sinus" appears, in consequence of the development of a transverse band separating it from the anus. This sinus subsequently, in consequence of a similar process of division, displays a "pars genitalis" and a "pars urinaria," the latter extending to the urachus. Two folds of integument on either side of the orifice develop into either scrotum or labia, with an erectile body

between, which is either subsequently retracted to form a clitoris, or elongated to become a penis.

So much for the external genitals. They evidently originate from the same primitive layer as the other external portions of the fœtus. The uterus, far from being the result of a coalescence of the Fallopian tubes, as was at one time believed, is derived, with the vagina, from the genital portion of the "uro-genital sinus"; and the distinction between the two is secondary, and effected by a subsequent demarcation of that portion of the sinus into a vaginal and uterine tract.

But it is generally stated that the essential organs of reproduction are the testes and ovaria. These are, it is true, derived, like the viscera of digestion, from the internal vegetative layer of the blastoderm, but the subsequent career of each—of the testes, at least—differs widely from that of their congeners. They are first formed in a mass of blastema lying in immediate connection with the Wolffian bodies. But very early in fœtal existence, the gubernaculum is found starting from the filamentous tissue of the scrotum, and fixing itself to the antetype of the epididymis, just as the round ligament rises from the labium of the female and attaches itself to the ovary. The testes then commence their descent, and, at the completion of pregnancy, ordinarily arrive in the scrotum, the cavity of which is speedily cut off from the general abdominal interior. Thus the testes are by a natural process set aside, as it were, from the organs concerned in organic life, and placed in immediate connection with those external parts, with whose function they are so intimately concerned. The ovary, on the contrary, remains fixed in the abdominal cavity, and, so far as regards its location, is not to be distinguished from portions of the vegetative apparatus.

It should be stated, however, that, even so recently as 1872,* it has been announced that the "cord" or "duct of Miller," which extends into the pelvis from a point between the Wolffian duct and the generatic glands, forms, by subsequent union with its fellow, the uterus and vagina, the divergent portion being converted into the Fallopian tubes. In the female, atrophy of the Wolffian bodies is said to produce the parovarium, or organ of

* Dr. Jenks, Am. Journal of Obstetrics, p. 738.

Rosenmuller, and in the male, the epididymis; the Wolffian duct being subsequently converted into the vas deferens.

Now, if the ovary and its function be physiologically considered, it will be observed that in one important particular it differs from all other adjuncts of reproduction, and is assimilated to the organic viscera. The function of other accessories of generation may remain unexcited and inactive during the entire life of an animal or vegetable, without impairment or derangement of physical health. This is not true of ovulation.

"Generation," says Bichat, "does not enter into the series of phenomena incident to organic and animal life. These are essential to the individual—that to the species. Its functions are aroused, only when all others have long been exercised, and its career is at an end when the latter are still in full activity. In most animals its periods of excitement are separated by long intervals of nullity; in man, where such remittance is less prolonged, it has no greater connection with other functions. Ablation of the generative organs is usually succeeded by a general increase in the processes of nutrition. The eunuch possesses, it is true, less vital energy; but the general phenomena of life are, in his case, displayed with greater profusion." While this is true, it is clear that the two lives, the organic and the animal, are best studied in connection with the alternative phases of *asexual* life, and *sexual* life. That life may be termed asexual in the adult, where no communication of the sexes occurs, and in sexual life, strictly speaking, the functions of the generative organs are duly awakened to activity. Now in asexual life, ovulation, when no abnormal conditions exist, proceeds with undeviating regularity; and experience everywhere teaches that such regularity is essential to perfect organic life. Interference with ovulation disturbs the entire economy, but its effects are displayed to a greater degree by perversions of order in the vegetative processes, than in those pertaining to animal life. The hæmatopœtic function is, in such cases, almost primarily deranged.

Nor need it be concluded that the uterus, if it be a development from the external blastodermic layer of the germ, has more than a sympathetic connection with the process of ovulation. This is abundantly demonstrated by cases in which there is a congenital absence of the womb. In the October number of the "American

Journal of Medical Sciences," for 1872, Dr. T. R. Brown, of Baltimore, reports a case of vicarious menstruation by epistaxis, in which death occurred from causes unconnected with the peculiar malformation; and in which an autopsy was made. No uterus was discovered, the bladder and rectum were firmly adherent—the ovaries were perfectly formed and in a normal position. Ovulation had recently occurred, and corpora lutea were found in various stages of degeneration.

The development of the sexual organs of plants seems to indicate the natural plan of their morphology. The essential parts of a pistil are the ovary and the stigma—the style may be viewed as the prototype of a Fallopian tube. The stigma corresponds to the external genitals, the ovary to the gland called by the same name in animals. Now the simple pistil, according to the botanist, Gray, "consists of the blade of a leaf, curved until its margins meet, and forming a closed pod or case, which is the true ovary. The upper face of the leaf answers to the inner face of the ovary—the lower to its outer surface; the tapering summit rolled together and prolonged, forms the style, when there is any; and the edges of the altered leaf, turned outward, either at the tip or along the inner side of the style, form the stigma." But the function of the leaf is that of a true viscus of digestion. No other portion of a plant exhibits greater organic activity. It is a depository of food in the seed-leaf of the bean. In the Sarracenia Purpurea, (so much vaunted a few years since in the treatment of variola) it serves, like the stomach of the camel, as a water carrier. In the Dionea, it is a fly-trap; in the tulip, its underground base is a reservoir for the nutriment requisite during the ensuing year. This indicates the affinities of the ovary in vegetable life. Let us ask further, if ovulation is essential to asexual life in plants, and whether it occurs where there is a natural impediment to sexual union.

Monœcious plants, as is well known, produce perfect flowers and seeds when individuals are isolated by transplantation or otherwise. Of the Atralia Spinosa, a polygamous plant, Mr. Thomas Meehan, of the Academy of Natural Sciences in Philadelphia, says: "When the flower-scape elongates, a very strong umbel of female flowers appears. A secondary series of female flowers succeeds this, and finally, a third series appears, which become filled with

polleniferous anthers. The whole of the first series of flowers falls unfertilized, *before the male ones can possibly appear.*"

To return to the ovary of the human female, it may be further observed, that, in an anatomical point of view also, it is distinguished from the other generative organs. The mucous lining of the urethra is continuous with that of the secreting surface of the testis. The mucous wall of the vagina and uterus, on the contrary, is not continuous with the interior of the ovary; but the Fallopian tubes open abruptly to the peritoneal cavity; and this is said by anatomists to be the sole instance, in the body, of continuity of a mucous and serous surface. Reichert held, that "in the grouping of tissues, as soon as one part can be made out to be continuously (by union, not mere juxtaposition) connected with another, both must be regarded as parts of a common whole." When, therefore, we do not find such continuity between parts whose function is correlated, it is natural to inquire into the reasons for departure from an established rule.

Certain pathological facts strengthen the idea that the ovary is removed in its diseases from the other generative organs. Metastasis of mumps, for example, occurs in the male, from the parotid gland to the testis; in the female, to the mamma and never to the ovary. Now the mammary gland is produced by a development from the external surface. Remak was the first to establish the fact that "glands in general must be regarded as consequent upon a direct process of proliferation on the part of epithelial structures." The mamma is formed by a repeated division of epithelial cells, until a little process extends inward, spreads out laterally, and finally constitutes a body continuous with originally external cells. The ovaries, as Virchow has pointed out, are the only exceptions to this law in the human body, since their follicles are only periodically open. But the mamma exhibits no functional activity in asexual life, while the function of the ovary is essential to perfect asexual life in the female.

The history of cancer also throws some light on this subject. Paget has shown that "cancer-cells are formed on the type of excretory gland cells and epidermal cells." The term "heterologous" cannot then be properly applied to pathological formations, if they be all greater or less imitations of simple tissue, occurring at unusual times, or in unusual locations, or assuming development of an

usual grade. We should, therefore, consistently expect to find that cancer most frequently invades such glands and tissues as are found in the integumentary and generative systems. Such is, in fact, the case. The lip, the mamma, the skin, and the testicle, are exceedingly apt for the formation of primary cancerous growths. Scirrhous tumors of the skin occur both secondarily and primarily, and occasionally precede mammary cancer. The latter affection occurs in ninety-eight per cent. of cancerous females—and generally between the ages of 45 and 50 years—or about the critical period of the menopause. About thirty per cent. of cases of medullary cancer affect the testicle—a larger proportion than that applying to any other single organ. Cancer of the ovary is extremely rare, and, when it occurs, it is generally secondary to an affection of contiguous parts. On the other hand, it may be said, that the cystic degenerations of the ovary are equally rare in the other organs of generation. Yet Dr. Walshe, in an endeavor to dissociate the phenomena of cancerous growths from all sexual complications, observes, that "everything which has been said to explain the liability of the breast and the womb to this disease, may be equally said of the ovaries, which are comparatively rarely cancerous." The reasons which explain the want of affinity between these organs, have already been considered.

Comparative physiology establishes with great distinctness a relation between the integument and the sexual parts. It is unnecessary to enlarge upon the development of the antlers of the stag, the increase in brilliancy of the plumage of certain birds, and the changes in the color and character of the fur of several species of animals, during seasons of sexual excitement, in order to develop such a relation. Indeed, it seems as if the outgrowth of external genitals bore an inverse ratio to the exhibition of sexual difference in the integument, in some forms of the animal kingdom. In those, for example, which have external organs of copulation largely developed, difference of sex is less noticeable in the skin and its appendages; while in those whose reproductive organs are wholly internal, as in those birds which have a common duct for the extrusion of the semen, or ova, and fæces, difference of sex is strongly declared by feather-coloring, comb, wattles, talons, etc. Among marsupials, the "Macropus Giganteus," or

kangaroo, has a common cloaca for intestinal and genito-urinary function, and the female is distinguished externally by the sac in which her young are carried.*

The changes coincident with the arrival of puberty in man, are marked externally by corresponding alterations. In the male, the beard appears, and the pubic and axillary hairs. In the female, there is a notable difference in the facial color and expression. Aberrations from normal pubescence are immediately indicated upon the surface of the body. "Chlorosis" is a term which in itself suggests chromatic changes of the skin and abnormal menstruation. "Anatomical observations," says Virchow, "indicate that the foundations of the chlorotic ailment are very early laid, for . . . the sexual organs are frequently very imperfectly developed." Unsatisfied or perverted sexual instincts also, at

* "In these mammals, the teats of the female are found in the marsupium or pouch. In many respects they are allied to the oviparous vertebrata. In the female, the marsupial bones assist in producing compression of the mammary gland, which is necessary for the alimentation of a peculiarly feeble offspring; and they defend the abdominal viscera from the pressure of the young, as they increase in size during their marsupial existence; and still more when they return to the pouch for temporary shelter. In males, these bones are subservient to the reproductive act. These mammals are also aplacental, and their period of gestation is but thirty-nine days. (In the Virginia opossum, which, however, is destitute of the marsupium, it is twenty-nine.) The young are produced in such an immature state, that earlier observers believed they originated like buds, from the nipples to which they saw them attached. The appearance presented by a young kangaroo of one of the largest species, within twelve hours of its being deposited in the pouch, is described by Prof. Owen, from personal observation in the Zoological Gardens, as follows: 'It resembled an earthworm in the color and semi-transparency of its integument, adhered firmly to the point of the nipple, breathed strongly but slowly, and moved its fore-legs when disturbed. The body was bent upon the abdomen, its short tail tucked in between the hind legs, which were one-third shorter than the fore-legs. The whole length from the nose to the end of the tail, when stretched out, did not exceed one inch and two lines. The mother apparently employs her mouth in placing the young at the nipple, where it remains suspended, involuntarily absorbing milk for a considerable time (probably two months on an average) after which for some months it sucks spontaneously. Although from the first it is enabled, by the muscular power of its lips, to adhere firmly to the nipple, it does not possess strength to obtain the milk by the ordinary process of suckling. In this process it is assisted by the adaptation of a muscle to the mammary gland, which, by contracting, injects the milk from the nipple into the mouth of the adherent fœtus.'"

the puberal period of life, are betrayed by familiar external appearances.

There is some reason to believe that the pigmentary deposit in the skin is more intimately connected with the phases of generation than any other constituent of the epidermis. The extent of variability in the number, and shade of color, of pigment granules, probably exceeds that of any component of the cutis. It is a matter of common observation, even among the negroes of our own country, that exceedingly dark individuals have unusually developed genitals, and that although the race in America has been greatly modified by intermarriage and acclimatization. Few who have observed the negroes in Africa (and my own experience extends to those who are habitually naked on the Coast of Guinea, as well as the Fellahs and Fellahines of lower Egypt,) can have failed to notice this fact. With them, the mamma is apparently destitute of the globular form common in the Caucassian races. But this is an apparent difference only. At puberty, a period which in these dark-skinned races is determined at a very early age, the gland is not unlike that of the white race. Subsequently, it elongates to such an extent, that it is possible for a mother to suckle her infant while it is supported on her back. The negroes are known to be inordinately erotic. Whether they are correspondingly prolific, cannot perhaps be, at this time, determined by statistics. But that they do not enjoy corresponding constitutional vigor, may well be doubted, in view of their extreme predisposition to tuberculosis, scrofula and rickets.

Now, if it can be shown that a congenital or acquired *absence* of pigment granules in the skin, is a concomitant of impotence or sterility, the relation of the rete mucosum to the genital organism can be more clearly detected.

The study of albinism offers such a field for observation. The skin of the pure albino is of a dull, milky-white color. His hair is exceedingly fine, and of a clear white or dirty-yellowish hue. His entire body is covered with a white down. The fundus of his eye is brilliantly red, and its iris is either red or completely transparent. His constitution is delicate; his temperament lymphatic. The depression of the forehead, the flattening of the nose, the prominence of the cheeks, and the woolly character of the hair, as well as an African nativity, usually justify the appellation of "white negro,"

which he has received, and give him the peculiar stamp of an African physiognomy.

The anatomist Buzzi, who has carefully studied these phenomena, declares that he has never found in complete albinism, any trace of the corpus mucosum, nor any pigment granules in the hair. Maurice Raynaud, in a monograph on this subject, remarks that retarded menstruation and sterility are said to be common in female albinoes. "In fact," he proceeds to state, "it does not appear that we possess a well-authenticated case of a child born of a father and mother both albinoes; but there are several recorded cases, where one or both of the parents presented this peculiarity. Ichthyosis was discovered in four of five albinoes examined by Rochas, and in others a corresponding tendency to cutaneous disorders.

Melanopathia, or Addison's disease, is an affection characterized by abnormal coloring of the cutaneous surface. It is perhaps true that its investigation has not yet extended to that point where we can rely upon deductions from its statistics; but it is worthy of remark, that while most observers have had their attention closely directed to the connection between the pigmentary changes and the lesions of the supra-renal capsule, they have not failed incidentally—and perhaps unwittingly—to record a correspondence in derangements of the organs of generation. In the London *Lancet*, for October, 1870, Mr. Houghton reports a case of Addison's disease in a girl seventeen years old, having a tawny skin and herpetic pustules on the face. She had never menstruated, her breasts were undeveloped, her nipples small, and their areolæ quite brown.

Subjoined is a table of sixteen cases of this disease, out of 185 collected in a monograph by Dr. Jaccoud, in each of which it appears that some disorder of the generative organs co-existed with the bronzing of the skin. In all of these cases there was more or less disorganization of the supra-renal capsules—in the last four, however, the cutaneous lesion was not evident. It should be added, as worthy of note, that in 67 of 107 of the cases collected by this author, the supra-renal glands were only secondarily affected.

No.	Antecedent and Post-mortem History.	Sex.	Age.
11	Cancer of uterus,	F.	28
12	Double ovarian dropsy,	F.	48
35	Retraction of testis,	M.	43
41	Dystocia and perineal laceration,	F.	37
36	Syphilis,	M.	32
66	Suppression of menses,	F.	16
75	Uterine tormina,	F.	47
90	Purulent catarrh of Fallopian tubes,	F.	(?)
94	Excessive post-partum hemorrhage,	F.	40
98	Tumor of right testicle,	M.	33
118	Suppression of menses and ovarian dropsy,	F.	19
127	Entire surface covered with short black hair, extreme development of external genitalia,	F.	3
2	Cancer commencing in clitoris,	F.	81
3	Eclampsia, confinement, and death in three days,	F.	(?)
18	Cancer of uterus,	F.	(?)
45	Sudden death after confinement, at term,	F.	(?)

Of these 107 cases the greater number suffered between thirty and forty years of age—a period of great sexual activity.

There is no standard by which the relative depression of the vital forces in disease can be estimated. The pulse may be registered by a sphygmograph—the temperature, by a thermometer—but it cannot be discovered whether the virile power, which is usually held in abeyance in pathological conditions, is normally quiescent, diminished, or suspended. But in convalescence, we have a qualified opportunity for such investigation. Are evidences of a restoration of this faculty more common in convalescence from disorders having cutaneous lesions, than in others? It is well known that many such lesions, originating from constitutional causes, become, after extinction of such causes, grave maladies of themselves. There are few morbid changes in the skin, where the whole surface is so generally involved, as in yellow fever. I have seen patients afflicted with this disease, whose skin assumed, not a yellow hue, but a color suggestive of incipient gangrene. Now in convalescence from yellow fever the proofs of an unusual and excessive awakening of the venereal appetite, are too numerous to be disregarded. La Roche, who has exhaustively described this disease, refers to this fact, as well as other authorities, who also agree with him in the belief that in latitudes where liability to epidemics of the scourge exist, no one of its predisponents equals in importance excessive sexual indulgence.

Thus far, those cutaneous disorders have been cited which im-

plicate the whole, or very extensive areas, of the integumentary surface. But the etiology of most of the other eruptive diseases has been arranged by dermatologists to include derangements of the generative organs. Among these eruptions may be mentioned —erythema, (both E. fugax, E. laeve, E. intertrigo, and E. tuberosum), as well as the varieties of erysipelas, roseola, urticaria, prurigo, eczema, impetigo, ecthyma and pemphigus. Nor are the exanthematous fevers exempt from complications having regard to the same organs. "An attack of measles," says the late Dr. Trousseau, "is frequently the cause of gangrene of the vulva and vagina in female children—in fact, vulval excoriation may serve as a door of entrance for the malady." Scarlatina is not an infrequent cause of abortion; and the same may be said of variola—the abortion, when occurring, being generally isochronous with the appearance of the pustules.

In a discussion of the subject of acne, before the New York Academy of Medicine, November 7th, 1872, Dr. Weisse took the ground that as the sebacious follicle is but an appendage of the hair follicle, and the sebum matures pomatum for the hair, the coincident activity in the development of hair and the secretion of sebum, is readily appreciated. From eighteen to twenty-five is the period during which occurred, probably, three-fourths of all cases of "folliculitis seboforæ;" and it is more common in males on account of the growth of the beard at this period. Dr. Peters thought it was connected with uterine and ovarian derangement, and that pubescence was a common coincident condition. Dr. Keyes considered acne in the young to be often a signal of sexual distress, of unqualified or perverted sexual yearning, perhaps often unrecognized by the patients; and while he believed in a connection between this cutaneous affection and certain uterine derangements, functional or otherwise, yet neither of these conditions was necessarily connected with the other. As regards treatment, he believed in the curative power of a well-regulated sexual hygiene. Dr. Robert W. Taylor was skeptical as to the origin of acne in uterine derangements; and did not believe that uterine catarrh, or flexions of the uterus, had any influence in their causation; nor had he been able, though he had studied the matter carefully, to make up his mind that such connection existed. Dr. James L. Brown expressed a similar opinion. The president stated that, if an unmar-

ried woman, between twenty and thirty years of age, should consult him for relief of acne, he would inquire into the state of the bowels and kidneys, before inquiring about any uterine derangement; and then he would ascertain if the menstruative secretion was normal. In the case of a married woman, affected with acne, he would first find out whether there was uterine irregularity or ulceration. He thought there was a direct connection between acne and these disorders, although it was not sometimes very evident. The eruption about the mouth, mentioned by Dr. Taylor, was, perhaps, more marked in uterine affections.

These opinions are given to show the wide difference of belief on this subject, among members of the profession eminent for an acquaintance with it. In my own experience one decided case has corroborated my own belief in the causation of the disease under discussion.

Mrs. S—, the mother of one child after eight years of married life, applied to me for the relief of confirmed acne rosacea of the face, of over two years duration. Her appearance was so unsightly that it had almost isolated her from the society in which she had once moved. She had previously resorted to the iron-magnetic springs of Michigan, with some benefit, but the disease had recurred with great severity. For a period of four months I tried the polypharmacy advised by various authorities, and was convinced more than ever, after failure of all treatment, that the disease had been justly named the "reproach of medicine."

Dr. Horatio L. Storer had lately called the attention of the profession to the disastrous results to women of the various means used to prevent conception. Suspecting, finally, that such a cause might obtain in this case, I discovered by questioning that, immediately after insemination, she had recourse to vaginal injections of cold water. On examination, I discovered moderate cervical engorgement. On the strength of my representations she completely abandoned the practice, and in ten months thereafter I delivered her of a healthy female child. The acne disappeared gradually without further medication, and the patient returned to that society from which she had been debarred by her ailment.

Syphilis is a disease which affords a striking example of the connection between the integumentary and generative organs. It effects its entrance to the system by way of the latter—it expends

the maximum of its force upon the former. While all the organs of animal life are subject to its destructive agencies it rarely affects the organic viscera. And such affection, if it occur, is peculiar to the later phases of the malady, when it is modified greatly. As a tertiary form, it is subject to different influences, and moderated or entirely removed by different medicaments, from those available in its secondary manifestations.

In conclusion, it may be remarked that however difficult it may appear to be to account for the affinities heretofore suggested, a link of connection may be found in the scope of two great general influences—the hæmopathic and the neuropathic. The alteration of the maternal blood in pregnancy by the admixture, for the first time, of its corpuscles with those secreted from the walls of fœtal vessels, must be exceedingly important; and the suffusion of the vascular elements of the cutis, at all times, with the vital fluid, exposes a large amount to external influences. The genitals and the skin, again, have unsurpassed nervous connections with the cerebral and ganglionic centres. The alteration of the circulation in the cheek during the act of blushing, as well as the change in the position of erectile genitalia, occur under the stimulus of mental and nervous impressions. Such phenomena may be said to be "excito-sensori-reflex."

Floriculturists may be said to demonstrate the fact of a law of compensation, to which these organs are subject. They assert that interference with the rootlets of a plant, while it is young, stimulates at once the reproductive function: as if the individual hastened to reproduce its kind, in anticipation of premature death. And further, that the artificial production of colors in the corolla of flowers, is effected only in accordance with the laws which regulate the generative organism of plants.

In view of all that precedes, it may be concluded that certain physiological and pathological relations, as stated at the outset of these remarks, exist between the generative and integumentary structures; that that assembly of reproductive organs, which is assimilated by function and development to those of animal life, has a more intimate connection with the external surface than that organ which displays the affinities of the vegetative viscera; and that a knowledge of the condition of one series of correlated phenomena, is essential to a correct appreciation of the other.

Editors' Book Table.

[NOTE. — All works reviewed in the columns of the CHICAGO MEDICAL JOURNAL may be found in the extensive stock of W. B. KEEN, COOKE & CO., whose catalogue of Medical Books will be sent to any address upon request.]

BOOKS RECEIVED.

Dental Caries and its Causes. An Investigation into the Influence of Fungi in the Destruction of the Teeth. By DRS. LEBER and ROTTENSTEIN. Translated by THOMAS H. CHANDLER, D.M.D., Professor of Mechanical Dentistry in the Dental School of Harvard University. With Illustrations. Philadelphia: Lindsay & Blakiston. 1873. 8vo. Pp. 103. Extra Cloth, $1.50.

The best exposition of the subject, it has been our fortune to meet. Dr. Chandler has merited the thanks of both dentists and physicians, in furnishing them this *brochure* in English dress.

First Annual Report of the Supervising Surgeon of the Marine Hospital Service of the United States. For the Year 1872. Containing a Brief Historical Sketch of the Service, from the date of its Organization in 1798.

Our thanks are due John M. Woodworth, M.D., the Supervising Surgeon, for a copy of his report. At the time of his appointment, we congratulated the Department on securing his services, and the present report amply sustains our opinion. We are particularly pleased at seeing under the caption, "Proposed New Hospitals," this sentence italicized: "*I particularly favor constructing all the hospitals of wood, and destroying them after ten or fifteen years, both as a sanitary and economical measure, and building new ones in their stead.* The prime object to be attained, is to secure favorable results in the treatment of diseases and injuries—an object which has been, in the past, subordinated to architectural design, and frequently to the favoring of certain localities. A permanent building of brick or stone should be constructed adjacent to, and separate from, each hospital building, to contain the heating apparatus and laundry." This is the true, the sound and modern doctrine, and the city of Chicago (or Cook Co.) should thoroughly investigate it, before entering upon the business of reconstructing its general hospital. Meanwhile, we extend our thanks to Surgeon Woodworth for his frank statement.

The Medical and Surgical History of the War of the Rebellion, (1861–65). Prepared in Accordance with the Acts of Congress, under the direction of Surgeon General Joseph K. Barnes, U.S.A. Washington: Government Printing Office. 1870. Part First, Medical Volume, pp. 726, and Appendix, pp. 365. Part First, Surgical Volume, pp. 650, Text; pp. xiv. Index, etc.

We have no time at present to write more than our thanks to the Surgeon General for these superb volumes, which demonstrate that in the hands of the Medical Department of the U.S.A., under his guidance, medical and surgical science will receive an impetus to be felt everywhere throughout Christendom. For our science can never be perfected by microscopic observation alone. The macrocosm as well as the microcosm is to be put under surveillance. Since the world began, there has never been a series of observations so comprehensive, and yet so minute and accurate, as those which are now first appearing in systematic form in these volumes. We shall look for each succeeding issue with high expectations.

The Science and Art of Surgery. Being a Treatise on Surgical Injuries, Diseases, and Operations. By John Eric Erichsen, Senior Surgeon to University College Hospital, and Holme Professor of Clinical Surgery in University College, London. A New Edition, Enlarged and carefully Revised by the Author. Illustrated by upwards of Seven Hundred Engravings on Wood. Vol. 1, pp. 781; Vol. 2, pp. 918.

It is superfluous to repeat the encomiums with which we have from time to time greeted the appearance of successive editions of this invaluable work. It stands pre-eminent among all the standard books on surgery. It is the great manual of practice. An old and well-thumbed copy of the American edition of 1860, stained and discolored by use and exposure, picked up, April 7, 1862, on the battle field of Pittsburg Landing, is at this moment on our office table, and we can well imagine the discomfiture of the late Confederate surgeon at its loss. On comparing the two copies, we find that each mirrors the practice of surgery at the time of issue. All through the volumes, we find evidence of most industrious and conscientious revision. Although much that had become obsolete is omitted, nevertheless, necessary additions have swelled the number of pages from 996 in our Confederate copy to

1699 in that before us. That copy has 417 illustrations, and this over 700. Hence the necessity of furnishing it in two volumes instead of one. The present edition is a splendid specimen of the printer's and binder's art, and the publisher cannot be too highly commended, for his good taste and liberality in sending out this cyclopædic treatise in such elegant garb. By the by, in turning over the leaves of our "Confederate copy" we happen on this prescription, hastily written in pencil on a scrap of paper, which shows several things needing no comment. We sincerely trust that the former owner of this book is now gathering, plentifully, of lawful greenbacks in the Sunny South, and not mourning for the enormous fees formerly paid him in Confederate scrip. Here is the prescription:

"Dr. Eve's Recipe for Gleet and chronic irritation of the urethra:

Balsam Copaiva,	1 oz.
Pulv. Cubebs,	½ "
P. Gum Arabic,	1 "
Spts. Nitre,	1 "
Syrup Buchu,	4 "

Cinnamon Water to fill black bottle.

Dose, 2 tablespoonfuls twice a day."

☞ Quite a number of Book Notices, already in type, are unavoidably crowded out of this issue, which will appear next month.

Editorial.

Fees versus Salaries.

One "Dr. Holland" (whether M.D., D.D., or LL.D., is to us unknown,) is a writer of books seeking fame and fortune, and in the interim of their publication, a writer for newspapers and magazines, with getting the daily bread for the laudable "final cause." In one of his recent temporary flights, he has succeeded in getting noticed by the newspaper press, and hence his magazine article finds larger perusal than it would have secured had it not passed out from the pages where it first saw the light. In this way it has fallen under the Editorial Eye of this JOURNAL, and we are moved to call attention to some few things which intimately concern the

medical profession. He assumes that the rewards of professional and literary labor are too largely unequal, the advantage being with the professions. And then, that the lawyer and physician as "a notorious fact", have the advantage of all the other professions. *Ait:*

"There are two forms of income attached to this variety of work, viz., that which arises from salaries, and that which arises from fees. The former is fixed by the community for which the work is done, and the latter by those who do the work. The salaried man enters the market and sells his services at the highest rate which they will command in competition with others. The man of fees combines with his brethren to fix a compensation for his services, which compels the community to take them at his valuation or to do without them."

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"The men of fees are the physician and the lawyer. One has to do with the physical diseases of men, and the other with their legal quarrels and their crimes. We do not, in the slightest degree, disparage the usefulness of these two classes of professional men; we simply say that the better the other classes perform their work the less these have to do. They live upon the moral and physical evils of the country; and there is no reason in the nature of their calling for their advantage in pecuniary rewards over the other classes. There is no reason why a general practitioner of medicine, or a specialist in medicine or surgery, shall sit in his office and take in a single fee, for a service that costs him fifteen minutes of time, a sum equal to that which a teacher or a clergyman works all day to win. There is no reason why a physician, called into a house in consultation, should charge for his service a sum that it takes an editor two days of hard work to earn. There is no good reason for the setting of a price upon a surgical operation, performed in half an hour, that the most successful author's copyright cannot pay in a month. It is simple, inexcusable and outrageous extortion. If we go from the physician to the lawyer, we find still higher fees."

etc., etc. But the lawyers may look out for themselves.

That such ineffable *twaddle* should find admission to what claims to be a high toned, first class periodical (*Scribner's Monthly*,) and especially, be paid for, almost surpasses belief. Similar reasoning would put the wages of Dickens, Thackeray, and all other writers of highest repute on the communistic level with the shabbiest penny-a-liner of the daily press. It would put the costly lectures of Beecher and Phillips in the same category of prices with those of the home-made orators of a village lyceum.

If "Dr. Holland" knows anything of a science called Political Economy, he must know that one of its first laws is, that the *Demand* regulates the *Supply*. If the demand is in excess of the supply, prices rise; if less, prices fall.

If the rewards of any particular branch of industry or profession are beyond those of others, then there is a rush into that business, until the equilibrium is restored.

If the medical profession were, on the whole, more lucrative than the others, there would be a rush into its ranks that would

speedily bring its emoluments down to par. If physicians find their reward too little, fewer students will seek the doctorate. If all physicians were equally well qualified, and all communities equally well satisfied individually, doctors might become the salaried servants of society. But society pecuniarily would, on the average, gain nothing by the change, for it pays now the same average and no more.

Take any large city, and it will be found that, taken together, the pay received by physicians is not more than that received by any other class, where intelligence is required in business. There are but very few physicians, in town or country, whose income is in excess of the better class of salesmen and bookkeepers in mercantile houses. A very few have large incomes from extensive business and liberal fees—*rari nantes in gurgite vasto.* Of these lucky ones, there are two classes: The mere speculators in disease, the Jim Fisks of the craft; the really meritorious, because educated, sagacious and skillful. These get their large incomes on the simple politico-economical law of supply and demand.

Daniel Webster is said to have replied to a young man who asked him if he thought the legal profession was overcrowded, "There is room enough in the upper stories." Great lawyers, or those with great reputations, ask and receive enormous fees sometimes, yet the pay of lawyers as a class is probably not superior to that of physicians, or any other of the educated or even intelligent classes.

A great artist can demand and get almost any price for his picture or statue, whereas his less fortunately endowed brother in the craft can get little or nothing for the picture or statue he has worked half his lifetime in developing.

It was an Irishman who complained that the railroad charged him as much for riding an hour, as it cost him to ride in a stage-coach all day. Another one who had a diseased molar extricated from its socket deftly by a dentist in a few seconds, demurred to the charge of a dollar, because, on a previous occasion, another dentist charged only half a dollar, although he had been over an hour performing a similar operation, meanwhile dragging him all around the room by the turnkey.

The physician who by a prescription, written in a few minutes, saves a patient's life, or a long siege of sickness, is entitled to

little or nothing, compared to the one who with less natural ability, tact, education, and experience, doing his best, even, loses the life, or fails to prevent long and dangerous illness! Such is the necessary inference from the jeremiad of "Dr." Holland.

But space and time forbid our devoting any more thought to this literary chiffonier.

The Right of Petition.

In the war against one of the Municipal Boards, recently inaugurated in this much governed city, the Board of Trade, by its petition to the Legislature, for the abolition of one board, has set an example to the medical profession, which might be followed with great advantage by a similar petition, for the abolition of another, the Board (miscalled) of Health. If there is a single respectable physician in Chicago, outside of the Health Department, who can be found to sustain this monument of inefficiency, we shall be most happy to hear from him in its defense. We have been at some pains to ascertain the opinions of professional men upon this subject, and find the unanimous verdict to be one of condemnation, (varied, only, as to orthography.)

The people look to their physicians for advice in matters pertaining to health, and it is not enough for each to care for the health of his patients individually. Something he owes to society in its aggregate. The great mass of the populace is incapable of protecting its own health, and for this must the medical profession speak, when governments neglect their duty.

The condition of our city, in view of prospective danger to public health during the coming summer, is truly alarming, and demands the immediate action of the profession, not only as guardians of public health, but as citizens, whose lives are endangered, as are the lives of those who are near and dear to them. The Chicago public, with all its faults, is immensely charitable, long suffering and forgiving. It suffered the large mortality of 1872, costing, for weeks together, the life of one of its citizens every thirty minutes, it forgave these disastrous results, to the Board of Health, pleading the general demoralization consequent upon the fire as its excuse. The fire is an incident of the past. Commerce, trade, the arts, have revived, have acquired increased strength from disaster, and flourish with a vigor unknown before.

The organization constituted for the preservation of the public health, has exhibited only an increase of vis inertiæ, with which to meet the increased demands upon its sanitary nescience and administrative and executive inability.

The JOURNAL has been, during nearly six years, a silent observer of the revolution of this municipal grindstone, and of the clumsy efforts at axe-grinding made thereupon. "Turn about is fair play," even in grinding axes, and it would seem to be the public's turn now. If the public will only examine this machinery, it will be found especially adapted to private, not to public uses; for such ends it was designed, and to such it has been diligently applied, from the beginning.

The time has arrived when silence is almost equivalent to participation in guilt. The time has come for the medical profession as a body to speak openly its true sentiments, in denunciation of this legislative abortion, this miscalled Board of Health, to counsel the public to petition the legislature to revoke the acts of its predecessor, to abate this greatest of all nuisances, which has so long been a burlesque upon sanitary science, a disgrace to the city, and has now become imminently dangerous to public health. H.

The Thirtieth Annual Commencement Exercises of Rush Med. College

Were held in Central Hall, corner Wabash Av. and 22nd St., on Wednesday evening, Feb. 19, 1873. A crowded audience room bore witness to the interest manifested by physicians and the friends of the College. The Rt. Rev. Bishop Foley opened the exercises with prayer, after which Professor Freer, President of the College, conferred the diplomas on the following gentlemen, who had complied with the rules and regulations of the College for the secural of the degree of Doctor in Medicine:

1. J. I. Ashbaugh.
2. Franklin Bedford.
3. W. H. Battin.
4. J. M. Barclay.
5. H. C. Bostwick.
6. J. B. Browning.
7. C. C. Birney.
8. J. H. Cristler.
9. C. H. Carey.
10. E. B. Crommett.
11. F. B. Corbett.
12. C. M. Dodge.
13. W. L. Duffin.
14. E. M. Enfield.
15. D. W. Edmiston.
16. J. W. Evans.
17. John Grass.
18. C. V. Von Hiddessen.
19. W. A. Horton.
20. C. H. Hamilton.
21. W. J. Hart.
22. A. J. Hynds.
23. F. A. Hess.
24. C. F. King.
25. E. A. Kittell.
26. J. A. Kettring.
27. M. H. Luken.
28. F. E. Lewis.
29. N. A. Loofbourow.
30. G. B. Little.
31. C. L. Myers.
32. P. M. Mendenhall.
33. Geo. McCulloch.

34. M. G. McLean.
35. J. H. Mear.
36. O. C. Oliver.
37. D. W. Pearson.
38. W. W. Rurk.
39. G. W. Reynolds.
40. H. R. Riddle.
41. M. G. Sloan.
42. F. E. Sherman.
43. F. Shimonek.
44. J. F. Shaefer.
45. C. H. Smith.
46. J. J. Stone.
47. G. D. Swaine.
48. E. R. Smith.
49. J. N. Starr.
50. D. M. Slemmons.
51. K. T. Stabeck.
52. M. Shoemaker.
53. J. S. Thompson.
54. R. N. Turner.
55. H. J. Thomas.
56. W. W. Wood.
57. J. G. Walker.
58. E. B. Weston.
59. G. C. Wellner.
60. H. A. Winter.
61. J. T. Walker.

Post-mortem Degree—Sanford O. Alford.

Honorary Degree—A. Reeves Jackson, M.D., and Philip Adolphus, M.D., of Chicago; Chas. L. Allen, M.D., of Rutland, Vt., and Thomas O. Catlen, M.D., of New York City.

In accordance with a long established custom, the President then delivered his annual address to the class. He commended them for their high scholarship, excellent deportment, and uniform courtesy to their teachers, congratulating them on having so successfully and creditably passed their final examinations. Their attention was seriously called to the fact that they must *study*, all their lives, keeping up with the latest developments of the profession, must buy books and instruments so far as their means allow, not forgetting to own, soon as possible, their microscope and become adepts in its use.

At the conclusion of the President's address, Dr. E. R. Smith, on behalf of the class, delivered the class valedictory, thanking the Faculty for what they had done for them, and promising unswerving fidelity to their Alma Mater.

Adjunct Prof. Walter Hay, M.D., was then introduced, and proceeded to deliver an unusually pleasing address, replete with the advice of a mature experience, elegantly expressed. Our space admits only of quoting one of the most exquisite perorations it has been our good fortune to listen to:

"To-day terminates the period of your pupilage, but not of your student life; that is just begun, and you have been looking forward to the commencement day as to the beginning of a new era in your lives, in which you would be no longer medical students. Many years ago I used to stand at the gateway of a noble old mansion in a far distant State, beneath the shade of a grand old aspen tree upon whose glistening bark the scholarly owner had carved in bold Roman characters the single word 'Vale'; and when I passed through that gateway out upon the dusty highway beyond, the quivering leaves of the aspen overhead seemed to whisper 'Vale.' To-night I seem to stand, like that old tree, at the threshold of your Alma Mater, to say to you in the name of the faculty of Rush Medical College, 'Vale,' Farewell. On the other side of that tree was another word which greeted the eye of the guest about to enter those hospitable shades, and that word I repeat to you in the name of the medical profession, whose doors are now open to you, 'Salve,' Welcome."

A large, beautiful desk was then presented to Prof. Allen by the class, Graduate Frank E. Lewis, M.D., making the presentation speech. Dr. Allen received the keys with one of his happy speeches, showing unmistakable signs of not having had any time to prepare a little extemporaneous (!) speech for the occasion.

After the benediction by Bishop Foley, the audience dispersed.

J. H. Etheridge, *Asst. Sec. K. M. C.*

THE

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EDITED BY J. ADAMS ALLEN, M.D., LL.D.; AND WALTER HAY, M.D.

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Original Communications.

ARTICLE I.—*Civil Malpractice. A Report presented to the Military Tract Medical Society, at its Fifteenth Semi-Annual Meeting, Jan.* 14, 1873. By M. A. MCCLELLAND, M.D., Knoxville, Ill.

(Concluded from page 145.)

The reduction being effected, means must be provided to keep up extension and counter-extension, and also means to prevent lateral and antero-posterior curvature. With the exceptions of fractures of the lower extremities, these ends are accomplished by the use of the splints alone. In fractures of the lower extremities, especially of the femur, we are, except in certain cases, which will be indicated, obliged to use other means for the prevention of shortening. In fractures of the shaft and upper end of the femur, there has been a difference of opinion as to what position the limb should be kept in during the process of repair. Dr. Ashurst in his remarks upon the subject, says: "I have no hesitation in expressing my preference for the treatment of these injuries by means of the *straight position with moderate extension*, whenever that mode of treatment is applicable. In cases of *impacted fracture*, extension is undesirable, and such cases may be treated by position alone, the

joint being fixed by means of the long splint, in any of its varieties, or simply supported by means of heavy sand bags placed on either side of the injured member. If the fracture be *unimpacted*, the same treatment should be employed, with the addition of moderate extension. *Counter-extension* may be made by means of a perineal band fastened to the head of the bed, or, which is usually sufficient, simply by elevating the foot of the bed, thus utilizing the weight of the body itself as the counter-extending force. It is right to say that there are certain cases, especially of intra-capsular fracture, in old persons, in which *no apparatus* can be borne, and in which even confinement to bed is fraught with dangerous consequences; under such circumstances the injured limb should be simply laid across pillows as recommended by Sir Astley Cooper, until the pain and inflammation which attend the injury have subsided, the patient being then allowed to get up in a chair or on crutches; bony union, under such circumstances, cannot be hoped for, and the *general* rather than the *local* condition of the patient should be the object of attention." *Princip. and Prac. Surg.*, 259–60.

For the dangers attending an excess of the extending and counter-extending force, the reader will profit by examining the Transactions of the last (May, 1872,) meeting of the American Medical Association, Surgical section. I abridge :—" Dr. Sayre, of New York, thought that the treatment by extension and counter-extension was being carried too far. Every ounce of force applied beyond that necessary to bring the fragments into exact adjustment was injurious; every ounce short of this was insufficient. Dr. Mussey, of Cincinnati, had a case under extension six weeks, with no union. He then took off extension, and union soon followed. A delegate from South Carolina, thought non-union scarcely ever due to over-extension. Non-union was as frequent under the long splint as under the weight and pulley—perhaps more so. Dr. E. M. Moore, of Rochester, thought the weight and pulley gave better results than the straight splint of Desault, but we had become so anxious to avoid all shortening that we often put on too much weight. In transverse fractures, if the limb was kept at its full length, the fragments, though at first in contact, would soon become slightly separated by the absorption of the spicula of bone projecting from their ends;

and non-union would ensue. Dr. A. C. Post, of New York, thought the limb might be lengthened by too much extension, even by extension not sufficient to cause discomfort. Examining and measuring all the compound fractures of the thigh under treatment in the Washington Hospitals, toward the close of the war, (where he found Buck's extension giving incomparably the best results), he had discovered one case of slight elongation in an adult. Dr. Gurdon Buck, of New York, claimed for this method, (extension by adhesive plaster, pulley and weight, counter-extension by raising the foot of the bed), which bore his name, that it offered the most efficient means of maintaining uninterrupted extension without discomfort to the patient. It was especially adapted to children. In all his experience but one case of non-union was fairly attributable to over-extension; this was the case of a healthy adult, and the surgeon having the case in charge had, during the whole treatment (ten weeks), kept on a weight of more than twenty pounds. The case had suggested a rule which he had since followed, not to maintain a heavy weight, with hope of securing an unshortened limb, beyond the first fortnight. Dr. Gregory, of Mo., thought that elongation of the limb in young subjects, where the fracture was in the lower third of the femur, might be readily explained by increased growth of the epiphysis from fluxion to the part. Non-union might be due to many other causes, some of them obscure. The obstinacy of Dr. Buck's case would seem to imply that there was some other influence at work to prevent repair than the twenty pounds extension." *Medical Record, June* 15, 1872.

"It is only in fractures of processes, that lengthening of fractured bones would be complained of. The muscular contraction would tend to draw the process away from the shaft or body of the bone, hence the necessity of so dressing the part that the fragments would be kept in as near apposition as possible. For this reason, in fractures of the olecranon, the parts should be kept in the straight position, else by the action of the triceps muscle, the process would be carried so far from the ulna, that the power of extension would be thereafter lost. The great danger to be apprehended in fractures of this joint is anchylosis, and this will occur irrespective of the position in which the arm is dressed." *Hamilton*, 310.

"The tendon of the biceps and facia brachialis in front, and tendon of triceps behind, are all more or less involved in the inflammatory action, set up by fractures in this region, becoming thickened and tense, and more or less adherent to each other and adjoining tissues. Stiffness of the joint is a necessary sequence." *Smith's Op. Surg., vol.* 1, *p.* 761.

To a man with a broken thigh or leg, a comfortable bed to lie upon is of the first importance. "The practitioner who fails to give the proper instruction respecting it, is guilty of gross dereliction of duty." *Gross' Surgery, vol.* 1, *p.* 865. On the same subject, Hamilton remarks, when speaking of fractures of the thigh, (*Frac. and Dis.*, 430): "Where some form of fracture bed cannot be procured, and the patient is compelled to lie on a common cot bedstead, or a common post bedstead, or upon the floor, I cannot think the surgeon ought to be held in any degree responsible for the result." H. H. Smith, (*Op. Surg., vol.* 1, *p.* 606,) is equally decided in respect to this matter. He says: "If the patient has a fractured thigh, leg, or cranium, or any injury by which he is likely to be confined to his bed for some days or weeks, the bed upon which he is to lie, must be prepared for that purpose."

After the reduction of the fracture and the application of those means for the retention of the broken bones in apposition, attention must be given every day or twice a day to the accidents that may follow the injury or the dressing. Paralysis of the bladder, especially in elderly patients, demands attention. Erysipelas, delirium tremens, and tetanus, may also claim his care. The most frequent accidents, however, are bedsores and ulcerations from undue or too long continued pressure. Ulceration is particularly apt to occur upon the heel or upon the internal or external malleolus. This trouble is to be obviated by shifting the pressure to some other part of the limb. The ulceration upon the heel can generally be entirely obviated by a bladder, distended with air or water, placed beneath the heel, and changed as often as necessary, or by a wide rubber band passing beneath the limb and attached to the upper edge of the splints, or even by a piece of cloth attached in the same manner.

Complications. "Implication of the joint in the line of fracture will very often give rise to a certain amount of stiffness if not

absolute anchylosis after recovery, or in a strumous constitution may cause disorganization of the articulation, and thus eventually render amputation imperative. Chorea, affecting a limb which is the seat of a fracture, is a very serious complication. Fractures in a paralyzed limb unite; danger to be apprehended here, is from sloughing. Tardy or delayed union of bones is occasionally met with, and is, probably, more often dependent on constitutional than on local causes. Sometimes it appears to result from mere debility and depression without the existence of any positive cachexia. Occasionally, a broken bone does not unite at all, or unites only through the medium of fibrous or ligamentous bands, or, having united, becomes again separated by the absorption and softening of the callus. In some bones, indeed, as in the patella, bony union almost never occurs. So also fractures of the neck of the femur, within the capsule. Among the causes of non-union may be mentioned, general impairment of health, and various cachectic conditions and diatheses, such as scurvy, phthisis, rickets, syphilis, or cancer." *Ashurst, Princip. and Prac. Surg.*

In respect to union in the case of paralyzed limbs, I think, when it takes place, it certainly must be somewhat slower than usual. It is an accepted doctrine, that the nutrition in a paralyzed part is generally if not always impaired, and as a consequence repair must progress slowly. Nutrition might be so much impaired that union would not take place at all. Mr. Travers reports a case in which a "patient had a fracture in the arm and another in the leg, complicated with an injury of the spine which palsied the lower half of the body. The broken humerus readily united, but the tibia and fibula refused to heal." *Gross' Surg., vol.* 1, *3rd ed., p.* 882.

In suits for malpractice in the treatment of fractures of the lower extremity, one of the allegations is, generally, "shortening." "With regard to the prognosis of fractures through the shaft of the femur, I have no hesitation in saying that I have never seen a *perfect cure*, either in my own practice or in that of others; by this I mean, that I have never seen a cure without shortening. * * * * * * * I have never seen less shortening than a quarter of an inch after fracture of the thigh even in children; and I consider a shortening of from half an inch to an inch, a satisfactory result in adults." *Ashurst's Surg.*, 260.

Velpeau says, that "after fractures of the femur there is no limping unless the shortening exceeds three-quarters of an inch; and the same is true if the shortening occurs in the tibia."

Hamilton, says, (*Princip. and Prac. of Surg.*, 292, 308): "When, in consequence of displacement, an overlapping continues, the average amount of shortening, in adults, in simple fractures, will be about three-quarters of an inch, and ranging from one-quarter of an inch to one inch and a half; nor will a greater amount of shortening necessarily imply unskillful management. With children, the average amount of shortening is probably from one-quarter to half an inch. Compound fractures, including nearly all gunshot fractures, unite generally with a shortening of from one and a half to three inches or more. In fractures of the tibia and fibula, which are mostly oblique, union generally takes place with a shortening of half an inch."

Among eminent surgeons who claim to have cured fractures of the femur without shortening, may be mentioned Amesbury, South, Hunt, and Gamgee, of England; Dorsey, of Philadelphia; and Scott, of Montreal. In regard to these, Prof. Hamilton holds the following language: "It is never a pleasant duty to call in question the accuracy of another's statements as to what he has himself alone seen and done. The circumstances that would justify such an expression of scepticism, where the witnesses, as in this case, are presumed to be intelligent and honest men, must be extraordinary. Such, however, I conceive to be the circumstances in this instance. It is certainly very extraordinary that a few gentlemen of acknowledged skill, but whose means and appliances are concealed from no one, are able to do what nearly the whole world besides, with the same means, acknowledges itself unable to accomplish. Such is the fact, nevertheless; and our lack of faith in their testimony is only a necessary result of our experience, and of the experience of the vast majority of practical surgeons, as opposed to theirs."

In the same connection, Prof. Hamilton gives the names of the many eminent surgeons who admit shortening as a necessary sequence of fractures of the femur. Among these names we find Hippocrates, Celsus, Avicenna, Scultetus, Chelius, John Bell, Benj. Bell, Nelaton, Malgaigne, Maclise, Holthouse, Mott, Knight, Detmold, J. Mason Warren, and Lente. Certainly the weight of

authority is conclusive. The writer's experience gives seven cases, three of the thigh and four of the leg, in all of which there was shortening.

"It should be borne in mind, that fractured limbs have been released from splints, and other dressings, at the proper time, of proper length and free from deformity, which, nevertheless, have soon become both shortened and bent." *Liston's Elements of Surg., Am. ed.*, 555; also, *Miller's Princip. of Surg.*, 497.

The requisite length of confinement is regulated by the age of the patient, extent of injury, and use to which the part is to be afterward put. In fractures of the lower extremity the time will vary from four to eight weeks, and the limb should not be used for several weeks more.

The following rules for the government of the surgeon in treating fractures, by Dr. Prince, of Jacksonville, are worthy of especial consideration:

"1. Apprise the patient and friends of the difficulties of the case and the uncertainty of a perfect result, whatever skill and attention may be exercised.

"2. Instruct the patient and nurses in the working of the machinery, and direct them to give him immediate notice of anything giving way or seeming to go wrong.

"3. Caution the patient to be careful of the limb after the chief support is taken off, and let him apply a starched bandage or other support to the limb, to be worn long after the patient goes about.

"4. Let him be *sure* that he has *disinterested witnesses* to what he may say and do, so that if any accident or unfavorable result occurs, he may be able to prove his points." *Chicago Med. Journal, May*, 1860.

In respect to deformity, it cannot, frequently, be avoided. Especially is this so in dislocations, when one or more of the articular eminences are fractured at the same time. Here, the resulting swelling forbids the discovery of the complication, and indeed should it be discovered, any known mode of dressing would but illy keep the fractured bones in apposition. In dislocations of the clavicle, either of its acromial or sternal ends,

deformity is a necessary sequence. So also, fractures of this bone never unite without some deformity. In dislocations of the humerus, the head of the bone may be displaced after perfect reduction, by gradual muscular contraction.

AMPUTATIONS.

In respect to amputations there is much error prevalent. The people suppose that whoever has performed an operation of this character, must necessarily be an eminent surgeon. The profession, on the other hand, is of opinion that almost any one can perform the operation. It is here that errors in judgment should be followed by punishment, if ever. It is not the mechanical skill that would be called in question, as much as the decision in respect to the necessity for the operation. To determine questions on this point requires the highest degree of surgical skill and judgment.

The necessity being answered in the affirmative, we have then to determine at what time the operation should be performed. During "shock," or the period of reaction? Consideration of this question is of the greatest moment to the patient. "Postpone a resort to the knife until there is satisfactory evidence of reaction; until, in a word, warmth and color return to the surface, the pulse beats vigorously at the wrist, and the sufferer regains, in some degree, his consciousness and courage. On the other hand, care is taken not to wait until the part or system are assailed by inflammation, which, under such circumstances, often extends with frightful rapidity, placing the case, perhaps literally, beyond the resources of surgery in the course of a few hours. There is, therefore, a time when interference must be avoided, not less than when it must be courted. The limits of these periods are not always well defined, and hence must be left, in each individual case, to the judgment of the attendant." *Gross' Surg., vol.* 1, *p.* 498.

"I am now prepared to affirm, that the period of reaction, or the primary period, is the best point of time for amputation, and that the immediate or period of shock, is not the best, but that, on the contrary, it is an imminently dangerous period; and yet I would make an amputation then, if the patient were bleeding to death, and I could not tie the arteries, or if there were spicula of bone

projecting into the nerves and producing spasms; or, if the limb were nearly severed by a cannon ball." *Hamilton, Lecture on Amputations; Med. Record, vol.* 1, *p.* 330. See also, *Pennsylvania Hospital Reports, vol.* 1, *p.* 149.

It will be seen from the foregoing, that "skill" will not be shown, alone, in the mere operation of removing the limb, but underlying and preceding the operation there are questions to be determined of vastly more importance. Nor are the questions just reviewed the only ones. Of no less importance is the question, At what point shall the operation be performed? The older surgeons had points, which they termed "points of election." "As these points have been so frequently changed, indeed, never fully established, modern surgery has formulated a rule upon which to declare the 'place of election.' It is this: inasmuch as the fatality following amputations diminishes as we get farther and farther away from the body, the practice now is very generally adopted, to amputate at that point at which we can save the most of the limb." This rule is *not*, however, applicable to amputations a few inches below the knee; here the "point of election" is the knee joint.

Regard is also had to the method, whether by the circular or flap operation. This is not of so much importance, good results depending more upon the subsequent treatment. As to this, the same general rules applicable to fractures and dislocations are appropriate. The resulting hemorrhage will need the surgeon's especial care.

How frequently should visits be made the patient? Each case will be a law unto itself. The responsibility rests upon the surgeon, and he should make just so many as his judgment dictates, uninfluenced by any inuendoes by the patient or his friends, or else demand that he be released from a responsibility he should not have been asked to assume.

What conclusions may be deduced from these judicial and medical views of "skill" and "negligence"?

Although no surgeon, however eminent, is exempt from the danger of suits from ungrateful patients, the law is for the surgeon's

protection as well as for the patient's. No gentleman of this Society need dread to have his professional acts investigated, if he can show that he has acted in good faith, conducting his treatment to the best of his ability; thus far the law is with him. We need nothing more to make our protection perfect, than the enactment of some statute, like that proposed for New York, which will require the plaintiff to secure us against all loss, in case he does not sustain his suit. We should also be permitted to have one expert on the jury, and, too, there should be some way in which the professional standing of the prosecuting witness could be investigated, to the end that such nonsense as that given in the case of *Haire* v. *Reese*—wherein the plaintiff's witness gave it as his opinion, "that the head of the femur might be '*crepitated*' by absorption,"—may not continue to go to juries as sound medical evidence.

Under no circumstances should we compromise such suits. We owe it to ourselves, we owe it to our profession, we owe it to the public whom we serve, to let the matter be tried by the strict letter of the law, and thus vindicate the honor of our profession.

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Beck's Medical Jurisprudence, 2 large vols.; embracing all the above subjects except Malpractice. Especially full on Malingering.

Ray's Medical Jurisprudence of Insanity. No better authority on the subject published.

Elwell's Malpractice is the only work yet published upon this specialty. He also discusses the subjects of Insanity and Medical Evidence.

Prof. Stephen Smith, of New York, has been collecting data for a treatise on Malpractice. This, when published, will undoubtedly be the best on the subject.

Ordronaux's Jurisprudence of Medicine in its relations to the Law of Contracts, Torts, and Evidence, is to be consulted by those wishing to know what rights they have in the matters treated of. It contains the statutory enactments relating to the practice of medicine in the States of Alabama, Arkansas, California, Connecticut, Delaware, Florida, Georgia, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, New Jersey, New York, Ohio, South Carolina, Texas, Vermont, Virginia, Wisconsin, and District of Columbia. Also, Malpractice and the Jurisprudence of Phar-

macy, including the Legal Rights of Physician, Druggist and Patient, in Prescriptions.

Dean's Medical Jurisprudence, considers th relations of—1, Sex ; 2, Injuries affecting the organization ; 3, Questions arising out of disease ; 4, Deceptive Practices, feigning disease ; 5, Age, Identity, Life Assurance, and Medical Evidence.

Of Foreign Treatises, Dr. Taylor's Medical Jurisprudence, edited by Penrose, is good authority. He discusses Medical Evidence, Personal Injuries of a Criminal Character, Pregnancy, Infanticide, Legitimacy, Insanity, and Life Insurance.

Dr. Guy's Forensic Medicine, considers questions in respect to Personal Identity, Age, Sex, Impotency, Rape, Pregnancy, Delivery, Fœticide, Infanticide, Legitimacy, Life Assurance, Feigned Diseases, Insanity, Medico-Legal Inspection of the Dead, and Toxicology.

Caspar's Forensic Medicine, in 4 vols., translated and published by the New Sydenham Society, is to be consulted on any of the subjects treated of by the above mentioned authors.

ARTICLE II.—*Removal of External Tumors.* By J. E. NICHOLS, M.D., Osage, Mitchell Co., Iowa.

On page 509 of the last volume of the JOURNAL there is an account of Michel's process for removing external tumors.

Determine as we may, the most dignified of our profession find human nature too weak to avoid an occasional step in the direction of charlatan practice. Without precisely knowing why we do certain things, we will launch out into unknown depths and make a trial of something with the most sanguine expectations.

With this preface as my only excuse, let me narrate a process I have employed the last year for the removal of external tumors with unlooked-for success. I will first state that the process is not original with me; but rather of the order charlatan. I will proceed at once to the cases in contemplation.

Feb. 6, 1872. Mrs. B—, aged about twenty years, applied to me for the relief of a dry, hard and very painful tumor in the palm of the right hand. It was then about an inch long and eight lines broad, nearly level with the skin, slightly bluish in color, dry and squamous on the surface. Had been forming over two years, and when first noticed was about the size of a pin head.

She had visited another doctor before coming to me, and he had pronounced it a cancer, and desired to remove it by extirpation in the usual manner. I sanctioned his diagnosis and advised the same treatment; but she declared she would die before she would have it "cut out," and desired to know if there was not some kind of salve that would remove it. She had heard of such measures being used. Following the hints of more learned surgeons, I replied, that plasters, I believed, were sometimes used but with indifferent success, and with almost certain recurrence of the difficulty. Imagine my very embarrassed position when she desired me to use any of the plasters referred to, and that she would abide the result, no matter what it might be. I never had heard of but one "cancer plaster," but I at once resolved to test the qualities of this. I took—

R. Chloride Zinc, (granular), } *aa*, q. s.,
Pulv. Sanguin. Radix, }

To make enough paste to cover the tumor, and rubbed the two together in the open air until deliquescence occurred, forming a very smooth, firm paste. I then cut out a hole in a piece of common adhesive plaster to correspond to the size and shape of the tumor, and stuck it on to protect the sound tissues from my application. Then spreading the paste evenly over the whole tumor, to the depth of half a line, I put over the whole another piece of adhesive plaster, not only to keep the paste in position but to get the thing out of sight, and bade my patient let it remain so for forty-eight hours, when I would again examine it.

Feb. 8. Removed the adhesive plasters, and was very agreeably surprised to find the tumor presenting a parched and withered appearance, and separated by a narrow, shallow seam from the healthy substance in nearly its whole circumference. I ordered a dressing of simple cerate after thoroughly cleansing it with soap and water.

Feb. 10. The simple cerate dressing has been changed twice a day. To-day the tumor seems to be entirely separated, by suppuration, from the sound parts, and lies in the wound like a foreign body. Taking it up carefully with dressing forceps I discovered several fine filaments reaching down into the bottom of the cavity, and as the slightest tension produced pain, I allowed it to remain.

Feb. 11. To-day I succeeded in picking out the tumor without the slightest twinge of pain. Ordered the simple cerate dressing, and in a few days the wound was completely filled with granulations and healed over. She declared that with the exception of a few hours' slight pain and lameness in the hand, she had not suffered at all from the removal. The tumor when out resembled a scorched piece of leather half an inch thick and of the dimensions before given.

March 3, 1872. She again consulted me, and exhibiting two little points in the cicatrix the size of a pin head, and quite red, informed me that they pained her considerably, and desired the plaster to be again applied to them. Fitting the adhesive plaster around them, as with the larger one, I applied the merest particle of paste to each, and in a few days had the satisfaction of removing them, each the size of duck shot. I have seen her repeatedly up to this date, but there has been no recurrence of the tumor or pain.

Soon after this, Mrs. A., aged about 50 years, consulted me about a tumor under the right eye, half or three-quarters of an inch from the lower border of the orbit, and about the same distance from the nose. It was quite red and painful, and had been three years in forming. I used the paste in precisely the same manner as before.

In forty-eight hours I removed the plasters and found considerable inflammation, but no tendency to separate from the healthy parts. Applied the plaster around it, and used the paste again. Forty-eight hours afterwards I removed the plasters, and as she lived some distance from my office, I told her to apply the simple cerate till the tumor was loose or came out of its own accord, and then continue the same dressing till it healed.

Aug. 26, 1872. She came to my office with a red, protruding tumor twice the size of the first. Said that the old one came out all right, and the wound healed up, but that this one soon began to grow. She had been careless about having it removed until now it was too painful to endure.

It was easily removed with one application of the paste, and the after-dressing of simple cerate. It has not yet recurred.

Nov. 10, 1870. Mrs. K— came to me with what I diagnosed, after Erichsen, as an encysted abscess of the right breast. Treated

it with tr. iodine, etc., till Dec. 18, when I administered chloroform, and inserted two setons. Ordered stimulating applications topically, and some alterative treatment.

July 19, 1871. The breast seems to be all right; the setons were removed, and the abscess perfectly cicatrized.

March 20. Appears with a new abscess directly over the site of the old one. Will not submit to setons. Is opposed to the exploring needle, and positively objects to the lance.

R. Cut a hole in a piece of emplastrum adhesivi the size of a hazlenut, and placed it over the most prominent part of the abscess. Applied the paste.

In four days, I removed a plug of destroyed tissue. Put a very small quantity of the paste in the opening thus made, filled in with a tampon of cotton-wool, and in two days' time was pleased to learn that large quantities of pus had escaped from the abscess. I now ordered the simple cerate dressing.

April 20. It is healed up and the mammary gland natural, except the cicatrices. Has not recurred.

I now began to conceive that so far as removing external tumors was concerned I was possessed of something as potent as Aladdin's lamp, and for the next six months not a tumor, wart, or excrescence of any kind, came to my notice, but what an immediate application of the "Cancer Paste" proved as efficacious as the barber's salve did to the humpback's neck in removing the fishbone. At last my eyes were opened to the necessity of caution in the administration of this all-potent and quackish paste, by accidentally causing a fistulous abscess in the parotid gland in removing an obstinate tumor (simple, however,) of the neck. But whether its removal by knife might not have been more disastrous I am not prepared to say. I am now operating on a tumor of the antrum of Highmore in the case of a young man who came before our medical association last fall. It was the general verdict that the right superior maxillary must be extirpated. I have repeatedly applied the paste on cotton, to the cavity formed by the expulsion of the bicuspid, canine and two molar teeth. The tumor has gradually come away in large pieces, and smaller ones, and the tumor lessened in size more than one-half at this date. I will try to remember and report the result when the treatment is completed.

On the whole, I conclude that this paste is useful in removing cutaneous tumors where the patient will not yield to the knife; and that for the removal of cancers it is less painful and more successful than extirpation in the ordinary way. I will, however, advise care in its use, that too great inflammation may not occur from applying it to a large surface at a time. If you have a large tumor, remove it by repeated applications through a small opening in the integument made by the first application. Whether it rests with charlatans to make use of such agents depends upon the patience and good nature of our Regulars. Of one thing I am wholly convinced by a continued observation of years, and that is, that many a good thing is poh-pohed at by those who ought to look into the matter and determine, by actual experiment, whether it is good or otherwise.

Further, allow me to say, in conclusion, that if the whole system of a cancerous patient seems to be impregnated with the malady, and the cancerous cachexia is everywhere visible, this means, as well as all others, is futile. A cancer should be removed ere it is fully known to be a cancer, and the use of the "Cancer Paste" will often gain the consent of patients for an early operation when they would not grant it otherwise.

ARTICLE III.—*Pathology, Causes, Course and Treatment of Rheumatism.* By JAMES S. WHITMIRE, M.D. Read before the Woodford County Medical Society, Metamora, Ill., Tuesday, Jan. 7, 1873.

MR. PRESIDENT, AND GENTLEMEN OF THE ASSOCIATION:

Having been appointed at our last sitting to make a special report upon rheumatism, its pathology, causes, course and treatment, I would beg leave to submit the following for your consideration.

In the first place, rheumatism is one of the oldest diseases known and recognized by the profession as a distinct disease, manifesting a peculiar character of inflammation, which is confined in a great majority of cases exclusively to the fibrous textures or membranes of the animal organism. It may be considered as pos-

sessing two distinct stages, the acute and chronic. The grade between these two stages may be reckoned as sub-acute, and partakes of the nature of both the acute and chronic stages, and hence it cannot be considered a distinct stage. The acute stage of rheumatism usually occurs as the primary disease, and its decadence into the sub-acute or chronic stage is simply a subsidence of the original attack into the latter stage. It is true, however, that, at the onset of the disease, we may have a sub-acute condition, and if not properly treated, or through indiscretion, this condition may develop into the well marked acute disease or subside into the chronic form. This is just as likely to occur as though it had been acute in the beginning, and probably more likely, from the fact, that, as the pain is less severe than in the acute stage, it is more liable to be neglected.

Rheumatism is an inflammation, but it is peculiar in its characteristics, affecting only one particular or special tissue—the fibrous—and this inflammation, though affecting primarily the fibrous tissues, may extend to other tissues of the body from contiguous sympathy, and therefore rheumatic inflammation may be present, or take place in any part of the animal organism where this (fibrous) tissue is present. We may therefore expect, most frequently, to see it seizing upon and affecting those parts which are the most abundantly supplied with this tissue; hence the large joints, tendons and pericardium are the most frequent recipients of its unwelcome visitations. Rheumatic inflammation is a peculiar as well as a specific disease. It is peculiar, because there is no tendency, while it is confined to its proper tissue, to suppuration or gangrene, a not infrequent result following ordinary inflammations of any or all the other tissues of the body. It is specific, because it has little or no tendency to affect any other but the fibrous tissue; but when rheumatic inflammation extends to other tissues from contiguity or sympathy, the character of the inflammation may or may not be changed, and its character may be the same, and the termination the same, as though it had arisen from any other cause, and may, consequently, be characterized by the usual phenomenon of ordinary inflammations, viz: pain, heat, redness and swelling, and its terminations are, consequently, by resolution, with or without effusion, by suppuration or gangrene, according to the circumstances of the grade, or intensity of the inflammation.

While the grade of rheumatic inflammation in the fibrous tissues may be ever so acute, and the intensity of the pain correspondingly great and persistent, I believe there are few if any cases on record that have terminated in either suppuration or gangrene; while, on the other hand, it may terminate as other inflammations, in resolution with or without effusion, and hence its peculiarity and specific character.

The object of this paper is, not so much to institute a more thorough investigation into the course of this disease, or the character of the inflammation attending it—these being sufficiently well understood, and treated of at length in all our standard works—as it is to invite the attention of the profession to the idea or theory, originally suggested and acted upon in the treatment of this disease, by the late Prof. J. K. Mitchell, of Philadelphia, which was, in substance, this: that rheumatism is a constitutional disease, the inflammation being brought about and maintained in consequence of functional derangement of the spinal cord; which derangement is produced by either active or passive congestion, or perhaps inanition of that important appendage to the great center of the nervous system.

It is only necessary, in this place, to mention the conditions necessary or most likely to disturb the functions of the spinal cord, and therefore the circumstances most likely to produce rheumatic inflammation; these are, exposure to the vicissitudes of the weather without sufficient clothing; heat, cold and moisture, wet feet, and the like; and these may not be the direct causes of the disease—they are most likely, if not certainly, the exciting cause. The view held by the greatest number of pathologists is, that there is a morbid material always present in the blood, in this disease; this materies morbi has been supposed by many to be uric acid, but chemical analysis by our best qualified observers has failed to establish its presence in a greater quantity than in health, while in gout—an analogous disease—its presence in a morbid quantity has been clearly demonstrated. "Others," says Prof. Flint, "have adopted the supposition of Prout, that the morbid principle is lactic acid. The majority of pathologists, at the present moment appear to regard this supposition as probably correct, and it is generally accepted as a rational basis of treat-

ment." "Lactic acid is supposed to be formed during the destruction of sugar in the lungs in health; it may be conjectured, therefore, that its presence in the general circulation depends on circumstances which either occasion its undue formation, or which interfere with its entering into combinations leading to its disappearance. It has also been conjectured that lactic acid is formed in the decomposition of the gelatinous and albuminous substances." This now brings us directly to the point at issue. Assuming, therefore, the lactic acid hypothesis to be true, the query naturally arises, may not this disintegration of those tissues, and the consequent formation of lactic acid, be brought about and even facilitated by the supposed functional derangement of the cord? And may not the failure of the acid to form new combinations in the lungs, and thereby preventing its elimination, be consequent upon the same functional disturbance? These are questions that naturally arise; and while we are conceding the acid theory of this pathological condition of the system—which is the acknowledged hypothesis—may we not, rationally, look for the cause in the direction of the *great centers*, that preside over and govern the nutrition and decay of the economy, while the elimination of all morbific materials from the blood is dependent upon the functional integrity of the same governing cause? Most certainly! is the only rational answer that can be made.

From time immemorial, the practice of the profession, in this disease, has been to a greater or less extent empirical; it has always, however, been governed by the greatest light and the most mature judgment that could be brought to bear in the premises; latterly however, since the co-ordinate branches of science—chemistry and pathology—have been levied upon by the profession, and made to yield up their treasures for the benefit of mankind, we no longer have to grope our way in the dark, theorizing and experimenting in order to arrive at conclusions, but at once apply principles and knowledge where empiricism was once the rule; hence, in the treatment of the disease under consideration, the professional mind has undergone a great change, and what was once considered a formidable disease, has become, under the light of science, one of the most easily managed of any in the catalogue of human diseases.

It has ever, until recently, been a query in the minds of

the ablest men of the profession, why this peculiar inflammation should be so erratic in its course, and so stubborn and persistent in its duration, notwithstanding the great variety of means at our command which are used to allay the pain and stay the progress of the disease. The well-known fact, that rheumatism affecting one limb, is more likely, in its peregrinations over the body, to light upon the other on the opposite or corresponding side, or persistently to remain on the same side, manifesting no disposition to cross the median line, would seem to indicate of itself that there must be some central organic derangement, if not absolute disease, that decides the position and locality of the disease. The economy depends for its healthy vitality upon these great centers, hence those portions of the organism become diseased when the functions of organic life from which they receive their healthy action are disturbed, and recover them again so soon as those functions are restored to their normal condition. This regularity in the transition of this disease from one part, or joint, to a corresponding one of the same or opposite side, is the rule; but there are exceptions not unfrequently noticed, such as its sudden transmission to the heart or its investing membranes, yet, true to its steady specific character, even in this instance it makes its appearance first in the fibrous tissues, and then may extend to the serous membranes from contiguous sympathy, through the basement membrane which is areolar, or compound fibrous tissue. It is therefore not to be wondered at, that the pleura and peritoneum are subject to the occasional invasion of this malady, because of the compound fibrous structure of their basement membranes. Now the easiest and most rational conclusion respecting the cause of this uniformity in its migratory tendency, is, that the cause of the disease rests in, and is governed by functional derangement of the spinal cord, and this being the seat of organic life from which the whole animal economy receives its vitalized support, we would naturally look to that source to account for any disturbance of these functions, and more especially those so commonly manifested in corresponding or co-ordinate portions, as well as corresponding tissues of the body.

Again, if the rheumatic inflammation has proven so unyielding as to resist all known remedies and methods of treatment, and gone on to the extent of producing confirmed deformity, we nearly

always, if not quite universally see that deformity in exact harmony with its acknowledged laws of co-ordination, consequently corresponding articulations and tissue, either on the same or opposite sides, are affected. Therefore taking for granted that the inferences drawn from these circumstances are true, the following questions would naturally arise: What is the nature of the functional derangement of the spinal cord? And what are the predisposing or exciting causes of such derangement? The predisposing or exciting cause of the disease is sufficiently set forth and commented upon in our standard works on theory and practice, under the head of causes or influences favorable to the development of rheumatism, and therefore they need but a casual mention in this paper; however, it may be well enough in this place to add our testimony to the now general opinion, that there is a rheumatic diathesis which may be either hereditary or acquired, the subjects of which are more prone to attacks of this disease than those who are exempt from this hereditary or acquired taint, hence a very slight exciting cause, in one possessing this predisposition to the disease, will develop the malady in its most aggravated form, whereas the same circumstances would be passed by without exciting the least irregularity in the health of one exempt from this predisposition.

That the predisposition to this disease is inherited, I have not the least doubt; but, because an individual has inherited the taint—if it may be so called—it is no evidence that he will certainly, at some time in life, be afflicted with rheumatism, because an exciting cause may never be presented to him, nevertheless, the predisposition is there, and will remain with him. This we see exemplified in other acknowledged hereditary diseases, such as gout, asthma, tuberculosis, scrofula, etc. Most of the members of such families will sometimes be exempt for one or two generations, and then in the third, perhaps, it will be developed with the most deadly malignancy.

As to the question in regard to the nature or cause of the derangement of the cord, it is more easily asked than answered, from the fact that seldom or never does any person die of this disease, excepting, perhaps, now and then a patient may succumb to its cardiac complications, and of these, the post-mortem examinations have hitherto been limited to the immediate seat of the diseased

structures, and notes made of their pathological condition, without even a thought of carrying the investigations beyond that point. And those who have become permanently deformed from the effects of the disease, usually live till the pathological condition of the cord gives place to the physiological; but from any changed condition of diseased structure, there is seldom or never a recovery. Pathologists have hitherto only directed their investigations to the local changes that have taken place in the diseased structure; hence we have ascertained, that, though the rheumatic inflammation has its primary seat in the fibrous tissue, and is not disposed to terminate in the usual manner of ordinary inflammations, yet when by contiguous sympathy it seizes upon the serous, muscular or other tissues, the programme of its termination is changed to those of other inflammations, and that, too, without in the least affecting the primary inflammation, or interfering with the original cause.

But there is a termination of pure rheumatic inflammation—if we may be permitted to call muscular atrophy a termination—in the condition known as atrophy, where all apparent signs of inflammation in the interstitial and muscular texture have subsided —provided such inflammation ever had an existence in fact, a matter, which to my mind is very questionable; because when a muscle, as is supposed, becomes implicated in rheumatic inflammation, the probabilities are, that the cellular tissue surrounding the muscle and every fibre and intricate cell-structure of the muscle, that this tissue is really, and in fact, the seat of the disease; the pain being caused by the movement or contractility of the muscular fibre, thus interfering with the quiet or passive condition of this tissue, the muscular fibre probably entirely exempt from the primary inflammation, but may, like other structures, become involved on account of the intricate connection of the structures. It may be mentioned, in this connection that atrophy is a condition not unfrequently resulting from rheumatic inflammation, and the cause is usually attributed entirely to the want of proper exercise; the pain produced by movement creating or causing the inability to use the muscles; hence from inactivity alone the absorbents are enabled to maintain a degree of activity sufficient to carry off the worn-out or broken down tissue faster than the recuperative powers of nature can build it up. But this reason is not sufficient of

itself, to my mind, to account satisfactorily for the cause of atrophy, and while I am at once ready to admit, that inactivity of a particular muscle may be, under particular circumstances a sufficient cause of atrophy, yet when there is no "power behind the throne," as it were, to account for the inflammation that in rheumatism precedes the atrophy, there is nothing more certain in nature than that it would yield to appropriate local, general or specific treatment, and the atrophy be checked by exercise, friction, the electrical current, or by a spontaneous effort of nature to readjust the nutrition of the parts by vitalizing the cellulo-molecular formation to that extent that it predominates over the disintegration and absorption of the muscular tissue.

But is this the case where atrophy is the result of rheumatic inflammation? Does any local treatment avail for either the atrophy or inflammation to put a stop to their certain and alarming disintegration? The answer is, most emphatically, No. Then where are we to look for the primary cause unless it be in the functional derangement of the spinal cord—that great vitalizer of the whole animal organism? And where are we to seek a remedy, excepting among those agents, the action of which is directed to the spinal cord, by either direct general or specific action?

The same rule holds good where there is atrophy from any other cause. We have, for instance, a case of atrophy or paralysis, perhaps both, from compression of the cord, by the dorsal spine, from injury or other causes; these are incidents that necessarily arise from compression; or, there may be paralysis from inanition, as is the case in *infantile* paralysis, atrophy ensues, and, perhaps, in connection with this, there may be fatty degeneration of the tissues, which is not at all uncommon even after rheumatic inflammation of the cellulo-muscular tissues.

In this case—that of injury—do physicians institute any other treatment than to keep the extremities warm? Would not any professional man be considered wanting in acumen who would undertake to drug such a patient, with the expectation of benefiting him any further than by general or local antiphlogistic appliances he might prevent or lessen the local inflammation that would be likely to ensue? Would not the chief attention be paid to the local treatment? And if, by any surgical manipulation, the com-

pression could be removed, would not that be resorted to as the primary means for the restoration of the spinal functions? And, when that was accomplished, nothing further would be required, except the ever-present *vis atergo* to restore to the limbs and muscles their proper functions.

And if this surgical interference should fail, and the powers of nature—the greatest of all panaceas for human ills—should prove abortive, or insufficient to restore the integrity of the functions of the spinal cord, we then have presented the same phenomena—atrophy with its concomitants—as in, so-called, muscular rheumatism, but without the pain of inflammation of the articular and cellular tissue. But herein consists the primary cause of atrophy in either case; it being produced from a want of equilibrium between the vital forces connected with the breaking down and building up, or the nutritive functions of the animal organism, which condition is brought about and sustained by a disturbance from one cause or another of the great center of organic life—the spinal cord.

Thus, we perceive the universality of the law—that like causes, from whatever source they may originate, produce the same effect, and in neither case would paralysis, proper, on the one hand, or paralysis from inertia on the other, be necessarily followed by atrophy, were it not, as formerly suggested, for the disturbance of the vital forces originating in spinal derangement, or absolute disease of this function.

Taking it for granted, therefore, that this hypothesis is correct, the action of the whole catalogue of anti-rheumatic remedies that experience has taught us is most reliable in the treatment of this disease, may be easily explained by the conceded theory of their action on the animal economy. Opium, for instance, manifests its curative agency in allaying pain, and producing rest, which is of the greatest therapeutic benefit in equalizing the circulation and rendering accumulations less likely to occur, and even removing such accumulations from the central organs, and lessening the pressure upon the capillaries of the medulla spinalis. Venesection manifests its agency by the immediate sedation produced upon the heart and arteries, the relaxation of the capillaries, exhalents and emunctories of the general system. The agency of the saline cathartics is manifested by lessening the amount of the circulating

fluids by means of copious alvine evacuations, thereby directing, or rather changing the current of the circulation and lessening its accumulation in the nerve centres.

And now, since the pathology of this disease is somewhat better understood, and the theory of the acidity of the secretions maintained, including a superabundance of fibrin in the blood as ascertained by our most accurate observers, it is probable that the alkalies manifest their remedial agency through the neutralization of the acids, as well as their tendency to lessen the production of fibrin in the blood, hence lessening the liability to the formation of false membranes upon the free surfaces attacked by rheumatic inflammation.

Colchicum, probably, manifests its curative agency in more points than any other single remedy in this harassing disease, and each particular point would be found to possess more or less of a direct relation to either lessening or relieving local congestions, such, for instance, as its known direct action upon the kidneys and the cutaneous exhalents, producing copious diuresis on the one hand or profuse perspiration on the other; besides, after it has begun to bring the emunctories of the system under its influence, among its manifestations are recognized those of sedation, affecting the impulse of the heart and arteries, and at the same time producing copious discharges from the bowels. These are only a portion of its recognized effects, and in this place we will not speculate upon its probable direct or specific influence over rheumatic inflammation, which is of no small consideration judging from its long popularity with the profession, as a remedy in rheumatic inflammation.

We might mention other remedies used under the varied condition of circumstances presented by this disease, among which are guaiac. and gelseminum, and assign to each its place, and point out the particular and distinct position that they each maintain in the treatment of this disease, but would probably fail to throw any material light upon the subject; therefore, from what has been said, and the conclusions we have drawn, there can be nothing more simple than what the plain indications of treatment are, and what should be apparent to every one.

It is simply cupping, or blistering the spine as circumstances may require, in conjunction with the use of local and general

remedies, such as the judgment of the physician in each particular case may dictate. We began this treatment as early as 1856, immediately after hearing Prof. Mitchell deliver his course on rheumatism, and in no instance, in a very extensive country practice, has this method disappointed our most sanguine expectations; neither has it made any difference in the application of cups to the spine, whether the disease was in the acute, sub-acute or chronic form, for this, in our opinion, is one of the first, last and main indications in its successful treatment, and therefore no time is to be lost in dallying with other means, but immediately resort to dry cupping with as large glasses as can be borne by the patient, and should circumstances be such that in our judgment a resort to vesication, or if only irritants or rubefacients, would be preferable, it is attended to at once, and in either case with the greatest relief to the suffering patient. There has been no instance of this disease under our care that has not speedily yielded to this treatment, along with appropriate internal and local remedies, and, indeed, much more readily than formerly when no attention was paid to the spine.

Among the constitutional remedies are those previously mentioned, but above all others stand colchicum and bi-carb. potassa. Locally, cotton batting, friction with rubefacients as the necessities of the case may require, may be applied to the affected parts. The average time required, in our practice, in a given number of cases, to place our patients on the convalescent list under this treatment, is from ten to twelve days; whereas under the ordinary practice, where no attention is paid to the spine, the average duration of the disease, in a like number of cases, is from sixteen to twenty days. Another thing that is worthy of note, in this connection, and which is of no small interest, both to the professional man and the patient, is, that since we have adopted this practice we have never seen a single instance of either endocarditis or pericarditis occur among our rheumatic patients, and besides the difference in the time of convalescence gained by our present practice, our patients have all had a more speedy and perfect recovery; and in no instance has the disease manifested so migratory a tendency as is usual, leaving the heart entirely exempt from its unfriendly visitations; and should further experience go to establish the fact, that cupping or blistering the spine, renders rheumatic inflammation less migratory, it

will at least strip the disease of one of its greatest sources of danger, and give us more confidence in giving a prognosis in a given case.

During the two years that we were in the army as surgeon of the 56th Regiment Illinois Vol. Infantry, from 1861 to 1863 we had no disease that gave us so much trouble and annoyance as rheumatism in all its forms, excepting perhaps diarrhœa and dysentery. Its most prevalent forms were lumbago and intercostal, from their mildest forms to their most distressing character. Our government supplies at best were meager enough, and we would often run out of a leading article for particular diseases long before we would have an opportunity of making a new requisition. At our morning sick-call, on almost every day, many of this character of cases would present themselves for treatment; as a matter of course, our acet. ext. of colchicum could not go very far, as we were only permitted to draw a certain amount for a given time, and hence many of our army surgeons who cared well for the sick under their charge, were more than half the time out of this important drug, and were, therefore, borrowers from those who cared less for those under their charge, or were ignorant of what was so often absolutely necessary for the welfare of their men. But by paying attention to cupping the spine, in the secret of which we had our assistant surgeon, and hospital corps thoroughly informed, we managed to get along admirably with our meager governmental supply of colchicum, made into pills with ipecac. Of these we ordered three each day, with from three to four twenty-grain doses of bi-carb. soda. By these means we were enabled to keep our men on duty during the whole time of treatment; whereas, under ordinary circumstances they would have remained on the sick list and finally become afflicted, as thousands did, with nostalgia, and either died, been discharged, or remained an incubus upon the government while they continued in the service.

Many of our regiment would come to me at the hour of sick-call, and say, "I do not want to be put on the sick-list, but if you will order me cupped, as I was yesterday, I shall be able for duty, and get along admirably, as the cupping yesterday cured me of my aches and pains."

This was our experience in the army, and it has been the same

in private practice, in regard to this treatment, for sixteen years; and, therefore, for the benefit of suffering humanity I would most earnestly recommend it for adoption to my professional brethren. And if, in the progress of their professional inquiries, they should ascertain as a fact, that there is a "balm in Gilead," I trust that they will not hesitate, either from prejudice or conceit, to use it to allay the pangs of suffering humanity; because, it is no small matter to our patients to be relieved of from two to six weeks of the most agonizing suffering, to say nothing of the advantages to be derived from a more perfect restoration to health than is usually obtained under the ordinary means of cure.

Selections.

Paresis. Read before the Northern Medical Association of Philadelphia, September 27, 1872, by ANDREW K. MINICH, M.D.

The term paresis is from the Greek—"I relax," and was introduced by Saloman, a Swede, as a substitute for "general incomplete paralysis of the insane,"—a very unwieldy term, and only partially expressive of the disease under consideration.

Since the days of Calmeil, one of the earliest writers on paresis, it has been recognized as existing in three distinct stages. The symptoms in the first stage are various, and chiefly mental.

There is often a disposition to wander from home, to neglect every-day duties, and to commit petty thefts. Generally there is a change in the morals of the patient; a religious man may become profane, and *vice versa*. Undue importance is attached by the patients to themselves. They imagine they have become wealthy, hold honorable positions, and express determinations to erect churches, colleges, establish new lines of railroads, or project other schemes of great magnitude. The voice in this stage is changed to a slight stutter or stammer.

The more marked symptoms in the second stage are disturbed locomotion and difficult articulation. The walk in this stage is peculiar. Dr. Sankey has well observed "that there is in health a kind of expression in a person's gait from which we may almost divine what kind of errand or business a man is upon." A man walking for exercise has a gait differing from one walking to attend to business. The two chums, with arms hooked, as they saunter along, contrast in a marked manner with the excited broker on Wall street. The gait of a person with paresis is that of

a man walking "without a definite object;" and later in the disease walking becomes more a "matter of business." The feet are raised but slightly, are widely separated, and fall flat upon the floor. His arms are to him what the balancing-rod is to the tight-rope walker—a means of maintaining his equilibrium. All the muscles seem affected. Any act requiring muscular interference is attended by phenomena due to a want of harmony in their action. To compare the movements and actions of a paretic to a drunken man would not be amiss, save that the paretic is cautious and deliberate, the drunkard reckless and garrulous. Later in this stage, walking is very difficult, and, from the labor spent upon its performance, a looker-on might well surmise that the performer was making it a specialty. The articulation is drawling and difficult, often the syllables are run into each other, and mumbling takes the place of articulate sounds. Twitching of the muscles around the mouth is common. The tongue when protruded is very tremulous, and is quickly drawn back into the mouth, in spite of urgent requests to the contrary. Grinding of the teeth is frequently indulged in,—a most unpleasant symptom to those within hearing distance. It grates sufficiently hard upon the ear to have such a symptom show itself in a bedridden patient, but to see and hear a man, with a confused stare, with reason dethroned, wandering around grinding his teeth simultaneously with every short step he takes, is almost beyond endurance. The intellectual, moral and motor faculties are all more or less influenced. The senses of touch and taste are impaired to a more marked degree. If a paretic is asked concerning his health, the reply generally will be, "first-rate," "bully," "beautiful," or some other brief expression. I would lay special stress upon the first of these answers, for almost invariably he will be "first-rate." The conversation of the paretic in this stage, as well as in the first, is not disconnected. Fixed delusion is very rare. His ideas bear the impress of change; they are not fixed like those of the monomaniac; *now* he he may be worth a hundred thousand dollars, and cashier of some bank, and one hour hence be a millionaire and chief executive of the nation. He grows *richer* but never *poorer*. "Excelsior" seems to be his motto. The symptoms, then, in this stage are, a want of power to control perfectly the motor, intellectual and moral faculties.

The third stage manifests its advent by dementia, and inability to stand upright or to execute any movement requiring the use of more than a few muscles. This muscular feebleness is more marked in the morning. In this stage the utterance is thick, and often unintelligible. The muscles are constantly twitching. The knees of the patient, when sitting, shake like those of a man suffering from a chill. His teeth chatter, he looks cold, although he tells you that he is "first-rate." Urine and fæces are passed apparent-

ly unconsciously. The urine in all the cases that I have observed was extremely phosphatic, not alone in this stage, but also in the second, although somewhat less in the latter. The temperature, according to Mr. Dodge, resident student at the Philadelphia Hospital, who carefully observed it at my request, was found to vary from one-half to one degree, according to the time of day. In the morning it was, in confirmed cases, one hundred to one hundred and five-tenths degrees. In the evening the mercury invariably rose to one hundred and one degrees. The appetite is good, almost voracious, up to the time of dissolution. This, no doubt, assists in prolonging the life of the patient when to the observer death seems imminent. I saw poor John Ambrose, a fine minstrel, whose voice once charmed enthusiastic audiences, literally, like Herod of old, eaten by worms, numbers of which, thick and fat, crawled from his anus and large putrefying burrowing sores. He was a mass of rottenness when death entered his chamber. He partook of a hearty breakfast but a few hours beforehand.

Picking at the bed clothes, and tearing them into shreds with hands and teeth, afford hours of employment to the bedridden paretic. Irritation applied to the soles of the feet produces immediate reflex action. Epilepsy and epileptiform convulsions often occur. Sometimes the patient is seized by apoplexy: indeed, not a few meet their death in this way.

Bed-sores are prone to occur in this stage, their formation being due to the patient's continued supine position, and to the frequent presence of irritating matter. The symptoms then characteristic of paresis are, mental derangement, difficult articulation, and disturbed locomotion.

The cause of this strange malady is still wrapped in mystery. Excess in some form upon the part of the patient, at some period of life, no doubt, lies at the bottom of this disease, as of so many others. The histories of cases confirm this belief. Medical science cannot, however, explain why it is that one person using alcoholic drinks as a beverage will, as a consequence, die of a cirrhosed liver, and another of a cirrhosed brain.

The diagnosis of paresis is not difficult. It may, however, be confounded with muscular atrophy, lead and mercurial palsy, chronic alcoholism, and certain cases of spinal paralysis. It differs from general muscular atrophy in this, that the latter is free from mental derangement. Symptoms of mental derangement, however, might occur in a case of muscular atrophy. In such a case the peculiar form of insanity in paresis, and the condition of the muscles, would serve to distinguish the two affections. Lead and mercurial palsy are less likely to be confounded with paresis. Lead palsy manifests itself more locally. The imperfect locomotion is more circumscribed. The wrists are chiefly affected, and the muscles of the affected parts become wasted. The condition of

the gums and the absence of delirium in lead palsy would also serve as distinctive features. Mercurial palsy can also very readily be distinguished. The peculiar trembling of the hand does not occur in paresis, neither is there mental derangement in mercurial palsy. Chronic alcoholism, the result of an abuse of alcoholic drinks, in which the motor and mental functions are affected, is more likely to be mistaken for this disease by a casual observer. This, however, is only true of decided cases of a chronic nature. They present distinctive characteristics. According to M. Thomeuf, the form of mental symptoms usually presented in alcoholism "is a kind of melancholia, with exaggerated fears, frights, delusions of being followed or watched, or of being accused of guilt. The paretic is never afraid, is not melancholy, generally entertains grand ideas, and is never unwell." All those that came under our own observation confirm this statement of Thomeuf. All would express themselves as being "first-rate," and this in tones, to use the words of Dr. Bucknill, "in which could be detected the signs of incurable disease." The appetite in alcoholism is deficient; that of the paretic can scarcely be appeased. Epileptic and epileptiform convulsions occur in paresis; delirium tremens in alcoholism. The latter is curable; the paretic always dies. Certain cases of spinal disease in which the paralysis is more or less general, may be complicated with delirium, and thus be mistaken for paresis. The history of the case, the condition of the spinal cord, and the nature of the delirium, would serve to point out the true diagnosis.

The pathology of this strange malady has been a fruitful source of discussion in later times. Observers do not agree as to its nosological position. Some view it as a form of mania upon which are engrafted paretic symptoms. This view is refuted by the fact that symptoms of paresis never occur in cases of chronic mania. Others maintain that paresis may exist without paralytic manifestations, and recognize it by the name of "ambitious mania." Ambitious mania, though it resembles paresis in the character of its delusions, is a separate affection. Paresis is ambitious mania, but it is something more. We have seen cases of chronic mania, of simple insanity, without any apparent physical disturbance, that even now pace the wards and strut along the corridors of the Insane Department of Blockley Hospital, whose imagination knows no limit. One sports with millions, another is the Saviour of the world, while several proudly march along, conscious that the world recognizes them as ruling monarchs. The majority of observers, however, look upon paresis as a separate affection—a disease *per se*.

It presents characteristics similar to other affections. It is influenced by locality. Dr. Grey makes mention of the fact that in the Edinburgh Asylum there are usually to be found from twenty to twenty-five cases, while Montrose Asylum, about twenty-

five miles distant, and containing about three hundred patients, has none. The disease is more prevalent in the eastern and northern parts of America than in the southern and western. Males are much more subject to paresis than females. Statistics prove the proportion to be about seven of the former to one of the latter. Age exerts an influence. Most patients are between the ages of thirty and forty years. Cases occur occasionally, however, to prove that neither the young nor aged are wholly exempt. All paretics are insane. Insanity is one of the principal symptoms. This mental derangement is manifested by an exalted imagination, —very rarely presenting itself in a different form. Respecting the pathology of paresis, some view it as an inflammation. M. Parchappe says, "all facts afforded by pathological research agree in confirming the inflammatory nature of the characteristic lesion of the cortical substance of the brain." M. Belhomme expresses a belief that "paresis is an encephalitis of a peculiar kind."

The post-mortem appearances are not constant in every respect. Sometimes there is softening, sometimes the brain is abnormally firm. This difference is probably due to the comparative duration of the disease. The arachnoid and pia mater generally present traces of inflammatory change. The microscope has detected in most cases a varicose condition of the capillary vessels of the cortical substance, and also a marked increase of its connective tissue. This increase of the connective tissue of the cortical substance is the most constant of the morbid conditions. It is, pathologically speaking, a cirrhosis of the cortical portion of the brain, the result of a slow inflammation. There is no doubt that the disease is cerebral. The impaired locomotion is not owing to muscular paralysis, but to something interfering with co-ordinate action. The constantly cheerful answer which the patient ever gives in regard to his or her health is due to one of two conditions, or to both. It may be but the result of a feeble conception. The brain in its diseased condition, with its cells compressed by the superabundant connective tissue, may be incapable of taking cognizance of the body's condition. The fault does not seem to be in the afferent or efferent nerves. They faithfully transmit impressions, as is shown by the immediate reflex movements that take place in response to any irritation applied to the surface of the body. It may be that even though the patient's brain is capable of appreciating pain and poverty with their accompanying shadows, yet his peculiar form of insanity, his ambitious mania, his radiant line of thought, will scatter those shadows as the wind scatters the leaves of autumn. His judgment has fled, and as his idea of wealth and splendor is not corrected by his bed of straw and lonely cell, in like manner his idea of personal comfort and perfect health may not be corrected by painful sores and fatal disease.

The prognosis is always unfavorable. A few cases of recovery

are reported. It may be that the diagnosis was not correct. Recovery, it is stated, was preceded by a general breaking out of boils.

Of the treatment very little can be said. Aside from attention to the general comfort and cleanliness of the patient, it consists merely of a "meditation on death;" of reading from time to time the inscriptions upon the mile-stones as our buoyant patient totters along the downward road to meet his inevitable doom. He is an inmate of that ward above the entrance of which is written, "For Incurables,"—a department which, through the deeply-searching spirit of modern science, may ere long, we hope, be made vacant, and the unfortunate paretic among the rest be restored to health, and ushered from that abode of fate.—*Phil. Med. Times.*

The Treatment of Whooping-Cough with Quinine. By B. F. Dawson, M.D., Clinical Lecturer on the Diseases of Children in the Medical Department of the University of New York; Physician for Children to the Demilt Dispensary; to the New York Free Dispensary for Sick Children, etc.

I am well aware that every therapeutical assertion, especially concerning pertussis, is to be accepted with the utmost caution, and that value can be placed upon such only as have been well tried and are based upon careful clinical study.

I deem it, however, the duty of every physician, after having carefully observed the value of any one therapeutical agent in the cure of some one disease, to make the same known to the profession, whereby its real value may be proven or its worthlessness exposed.

In advocating the use of quinine in pertussis, I am fortunate in being able to support my own experience with that of one whose name is well known on both continents, and whose contributions to the progress of medical science are always received as the teachings of one speaking with authority. I refer to Professor Binz, of the University of Bonn, Germany.

In 1870, a paper on "The Use of Quinine in the Diseases of Children" was contributed by him to this journal, (Vol. III, No. 1, May, 1870,) in which he advocated the use of quinine in pertussis, and stated that in his hands it had accomplished valuable results. Considering pertussis to be a neurosis of the pneumogastric nerve, caused by infectious and irritating mucus that has accumulated in the larynx and pharynx, and having found by experiments that quinine destroyed, even when highly diluted, all structures found in normal mucus, he supposed, without taking into consideration

the more intimate morphological connection, that the mucus of pertussis also would be affected in a similar manner by quinine.

In this he was not disappointed, the trial equaling his expectations.

In the clinic for children's diseases which he held in Bonn, he says: "I have treated for the past two years all the cases of pertussis, without any exception, with quinine. The best proof of its good effects is seen in the fact that those in charge of the little patients repeatedly call again for the 'bitter medicine' whenever they have succeeded, either by coaxing or force, in administering it to them. There was a most striking difference to be seen in those whom it was impossible by any means to induce to swallow the solution of quinine. In these cases the whooping-cough assumed its regular obstinate course; in the others, although living in all other respects under perfectly similar circumstances, the paroxysms were always reduced in frequency and severity."* These good results with quinine, he stated, could only be obtained by strictly observing the following conditions: "*It should be given in solution; the dose should not be too small, and should not be administered in a vehicle that will prevent it from coming in contact with the mucous membrane in its passage through the pharynx;*" and the neglect of one or all of these rules he considers the reason why other observers have seen no positive results from the use of this drug. Certainly it is not just to condemn a remedy as ineffectual when it is not employed in the proper manner.

The assumption that pertussis is a specific local catarrh, caused by a fixed contagion admitted from without, Prof. Binz thinks, admits of being hypothetically explained by the fact of adults being almost unexceptionally exempt from it. "The stronger development of the epithelium may be regarded as a protection against the affection of the mucous membrane. This greater development in children probably takes place quicker if those parts of the throat, from pertussis, have been in a hyperæmic condition for weeks, and thus it is easy to comprehend how the immunity originates after the affection has once been surmounted."†

Still another cause of pertussis has been advanced. Dr. Letzerich, of Germany,‡ in 1871, asserted in a paper on the subject that he had discovered a form of fungoid growth which vegetates in the epithelium of the air passages, and by its irritation causes the convulsive attacks of coughing. The expectorated mucus in patients suffering from pertussis, he says, contains masses of brownish-

* American Journal of Obstetrics and Diseases of Women and Children, vol. iii, No. 1, page 8.

† Loc. cit., pages 9, 10, foot notes.

‡ Quarterly Journal Medical Science and American Journal of Obstetrics, vol. iv, page 761.

red spores, with occasional threads of mycelium, which in the latter stages of the disease becomes very abundant. These observations were made by experiments upon rabbits into whose tracheæ he introduced the fungus; in a short time the latter became affected with a noisy and violent cough—in fact, a genuine whooping-cough. The rabbits thus affected were killed and examined, and their air passages were found to contain the same fungus as that found in the sputa of human subjects; in fact, the mucus presented precisely the same appearance.

This fungus theory is certainly a very plausible and possible one, and one that even seems to be proven by the effects of therapeutical measures directed against the development of the fungus.

The fact that narcotic remedies do sometimes greatly influence whooping-cough, does not, however, weaken this latter theory, for by their use the sensitiveness of the pneumogastric nerve, and of the whole nervous system, is so benumbed as to but feebly appreciate or respond to the irritation in the pharynx and larynx.

Quinine, it is well known, has a powerfully destructive effect on true fungi and fungus germs—hence its great power over septic or zymotic affections; and why should it not influence the growth of the fungus of pertussis?

This theory of Dr. Letzerich tends to strengthen our belief in the appropriateness of Prof. Binz's treatment, for if the fungus theory is the correct one, then quinine with its destructive effects on fungoid matter may certainly be considered a most appropriate remedy.

Another advocate of the use of quinine in pertussis, a short time after Prof. Binz's views had been made public, was Dr. Breidenbach, who published a paper (noticed in *The Practitioner*, Feb. 1871, London,) on the efficacy of the hydrochlorate of quinine in a violent epidemic of 1870. In all pure cases he states its effects were really surprising, as soon as he had from precise observations determined the proper dose and mode of administration, in which latter point he thinks lies a great part of his success. The amount administered by him—the age of the subjects varying from three weeks to eight years, and the violence of the attacks being very different in different cases—varied from $1\frac{1}{2}$ to $15\frac{1}{2}$ grains. No other remedy than quinine was employed, and some of the children were freely exposed by poverty to the injurious effects of the weather. In the worst cases, he says, after the use of the remedy for forty-eight hours, the frequency and violence of the attacks diminished.

With such strong testimony in favor of the quinine treatment of pertussis, it is somewhat surprising that nothing, or very little, has been done in this country to test its value. Even in our text-books on diseases of children, nothing is said in reference to the use of quinine in whooping-cough, and in such recent works as the last editions of Lewis Smith's and Meigs and Pepper's books,

the omission still continues, notwithstanding that the articles already referred to appeared in 1870–1 in an American journal, the only one devoted to diseases of children published in the English language. We can but trust that in the future editions the subject will receive proper attention.

Having opportunities for testing the value of anything new in infantile therapeutics, I determined after having read Prof. Binz's paper, to apply his treatment in all cases of whooping-cough coming under my care, at the two dispensaries with which I am connected, as well as in my private practice.

I did not have long to wait. On December 4th, 1871, the first case came to my class at the "Free Dispensary for Sick Children;" the following is the record of it, and five of the most striking cases.

Case I. Annie C——, 4 years. First whooped three nights ago; since then five or six times a day; is worse at night, paroxysms very soon ending in vomiting. Ordered solution of the sulphate of quinine of fifteen grains to the ounce of water, a teaspoonful to be given every two hours. No other treatment. To return on the 6th.

Dec. 6.—Mother states that she vomited the first dose, which was given at 1 P. M., and considerable thick phlegm. Had no whoop until just before giving the evening dose at 7; also once at night. The paroxysms were not so severe. She whooped once at 9 this A. M., but much softer, without any nausea. Ordered half a tea-spoonful of the quinine solution in one of water every two hours, and to return on the 8th.

Dec. 8.—Child greatly improved in appearance. Mother states that she has whooped but once since the 6th, and that was on the same evening. Ordered to continue medicine, and return on the 10th.

Dec. 10. Has not whooped since 6th. Ordered to continue the quinine in same manner, but only three times daily for one week. To return if she whoops again. This she did not do; so she was registered as cured.

Case II. Margaret M——, 7 years. Brought to the same institution Dec. 18, 1871. First whooped five nights ago, (Dec. 11); since then has grown worse, and now whoops almost every hour. Had an attack while in the dispensary, which was very severe, and was followed by vomiting. Ordered solution of the sulphate of quinine, ten grains to the ounce of water, a teaspoonful every two hours daily. To return Dec. 20.

Dec. 20. Vomited first and second doses, with it considerable stringy sputa, more than in previous attacks; a slight whoop occurring each time. Since then has whooped but twice during

yesterday, once during the night, and on rising this A. M. Attacks not so severe. Medicine ordered to be continued.

Dec. 24. Child has whooped but once daily in the evening since 20th. Continue treatment.

Dec. 28. Has not whooped for two days. Continue treatment for one week.

Jan. 5. No return of whoop. Discharged cured.

CASE III. Bernard W——, 22 months. Healthy child. Brought to the Demilt Dispensary Dec. 20, 1871. Whooped first on the previous evening, since then two or three times. Ordered quinine in solution, five grains to the ounce, a teaspoonful every hour.

Dec. 24. Child whooped but twice since taking the quinine on the same night, Dec. 20, and vomited the first three doses; with them considerable tough sputa. Continue treatment.

Dec. 28. No return of the whooping since the night of the 20th. Discharged cured.

CASE IV. Albert F——, 10 years. Was brought to my office by his father, Jan. 3, 1872; he having whooped twice during the preceding night. Ordered quinine sulphate, ten grains to the ounce, a teaspoonful every hour. To call in two days.

Jan. 6. Whooped once very slightly in the night of the 3d. Not once since. First dose nauseated; coughed up considerable thick phlegm after first few doses. Ordered to continue the quinine for one week. No whooping occurred during that period.

CASE V. George F——, 4 years. Brought to the Demilt Dispensary Jan. 11, 1872; having had the whooping-cough for the past two weeks. Paroxysms occur several times daily, and so frequent at night as to keep all awake. Vomits frequently, and shows markedly the effects of the disease. Ordered solution quinine, ten grains to the ounce, a teaspoonful everyahour during the day, and at night when awake.

Jan. 13. Much improved, the paroxysms not lasting so long or being so severe; ending at first in coughing up thick phlegm, but not so much now. Had three attacks during the night. Continue treatment.

Jan. 17. Has greatly improved; has not whooped for two days until this morning, when his mother thought he did. Ordered to continue the quinine.

Jan. 23. Has not whooped since last visit. Is "wonderfully well," as the mother expressed it. Was not again seen.

Case VI. George W——, 3 years. Came under my care Feb. 24, 1872. Had two whooping attacks during preceding night, and once on the morning of visit. Is in good health otherwise. Ordered quinine, ten grains to the ounce of water, a teaspoonful every hour.

Feb. 26. Whooped twice on the 24th, and once yesterday noon, though not so severely, and easily coughed up thick mucus. Last night had but one severe attack of coughing, but did not whoop.

Feb. 28. Whooped once very slightly night before last; none since.

Feb. 30. Has not whooped since last visit.

March 3. Has not whooped since the 28th. Ordered to discontinue the quinine, and to be brought to me should the whooping return. The child was not again seen, and I subsequently learned that the whooping did not return.

The above six cases have been selected out of sixteen cases of pertussis seen by me during the past year, in which quinine was the only remedy used; the remaining ten presenting similar histories. Out of the sixteen cases, the shortest cure was effected in one day, and the longest in twenty days. In but two cases have I been disappointed in the efficacy of the quinine. They were two dispensary cases; and from the fact that one, a little girl, was under the care of her father, and the other was a "farmed-out" infant of twelve months, I am inclined to attribute the failure to the negligence of those in charge of them, the quinine not being given to them as frequently as ordered. In both these cases, however, there was some palliation of the paroxysms.

In regard to the administration of so disagreeable a remedy, I found that, though frequently there was some difficulty in getting the children to take it, yet it was exceptional for them to resist after the first two or three doses, and in only a very few did it cause vomiting. The direction to give the children a piece of an orange or a little sugar five or six minutes after taking the quinine, doubtless, had considerable to do with their seeming willingness to take the "bitter medicine."

As to how the quinine so very remarkably influences this most troublesome and severe disease several theories might be advanced. If the fungus theory of Dr. Letzerich be the correct explanation of pertussis, then we can readily account for its efficacy, in the already mentioned fact of its destructive influence on fungoid development, and consequently its power consists in removing the cause of local irritation, which gives rise to the reflex phenomena evidenced in the whooping.

The above theory and explanation carries with it considerable weight, and, it appears to me, should be accepted until disproved, or a more convincing pathological explanation of pertussis is given.

For my own part, I accept it, and in consequence consider pertussis an affection of the mucous membrane of the pharynx and larynx, and the "whooping" as simply reflex. And the fact that almost all remedies given for other than their local effects, have either signally failed or but partially succeeded, strengthens this hypothesis.

Nevertheless, I do not attribute the rapid cure effected by quinine to the simple destruction of the fungus, but also to its nauseating bitter taste. In every case of pertussis, it will be conceded by all, there is an abnormal secretion of a thick tenacious mucus from the mucous membrane of the pharynx, (whether this secretion is due to simple catarrhal or reflex hyperæmia, or to fungoid development, it matters not,) which may or may not excite a paroxysm of whooping, but which certainly aggravates and prolongs the latter, as may be proved by the fact that the paroxysms invariably cease the moment this mucus is removed either by the coughing, vomiting, or the finger. Now, the effect of a small amount of a solution of quinine, when taken into the mouth and swallowed, is instantly, from its bitter and nauseating taste, to excite a free secretion of thin mucus from the buccal mucous membrane and the salivary glands, and this softens and renders easy of dislodgment the tenacious mucus referred to. The frequent repetition of the quinine, therefore, keeps up this free secretion, and thus prevents the mucus from becoming tenacious and difficult of dislodgment. At each act of coughing, therefore, the accumulated mucus is readily loosened and expectorated, and unobstructed inspiration obtained. The rapid loosening of the cough, the briefness of the attacks in comparison with those previous to the administration of the quinine, and the easy expectoration, certainly tend to favor the correctness of the above theory.

The failure of quinine against pertussis, in the hands of others who have tried it, is undoubtedly to be attributed to the manner of its administration—either in large doses at long intervals, or in the form of pills; in either case, therefore, the local effects upon which I place the greatest value are not obtained. While writing this paper, a friend, whose practice is largely amongst children, informed me that he met with no success with quinine in pertussis; but on his informing me that he had always given it in large doses, morning and evening, I attributed his failure to that fact.

The object with which I have written this paper is to call the attention of the profession to this treatment of pertussis, and invite them to give it a careful trial, feeling convinced that if the following rules are carefully observed, few, if any, will be disappointed in their results.

1. Give the quinine (sulphate or hydrochlorate) dissolved by acid in pure water only. For children under 3 years, from gr. v. to gr. viij., and for older children and adults, from gr. x. to gr. xij. to the ounce.

2. Give not less than a teaspoonful *every single*, or, at the longest, every two hours during the day, and whenever cough comes on in the night.

3. Give nothing afterward for some minutes to destroy the taste or to wash out the mouth.

4. Continue giving it notwithstanding the first doses may be vomited.

5. Be sure that the quinine is pure and thoroughly dissolved.

Appendix:—Since the above paper went to press, two cases of whooping have come under my care. One, a boy of three years, who was brought to my clinic in the University on Feb. 8; had whooped severely four and five times daily, and as often during the night. He had an attack in the presence of the students in the lecture-room. He was ordered quinine gr. v. to the ounce of water, a teaspoonful every hour daily. No other treatment. He was again brought to the clinic the following Saturday, Feb. 15, when his father stated that the attacks at once grew less severe and frequent after taking the quinine, and that on Wednesday day and Thursday (fifth and sixth days) he whooped but once in each twenty-four hours, very slightly. The medicine gave out on Thursday evening, however, and since then the whooping has increased in severity and frequency. The other case was a little girl two years old, who was brought to the Free Dispensary for Sick Children on Feb. 11. She had whooped for three days, five or six times during the day and night. Was ordered quinine as in the preceding case. Was again seen Feb. 15, at my clinic, and shown to the class. In this case the mother confessed to having been negligent in giving the medicine, not having given it oftener than four or five times during the day; and yet she said the child had greatly improved, and had whooped but once or twice during the night time only since taking the quinine. Both of these cases were also seen previous to and after treatment by Dr. P. B. Porter and Dr. Beverly Robinson, and being the last cases under my care, are a valuable addition to the preceding report of the six out of my first cases.

In the foregoing paper I wish to be understood as advocating the value of quinine in curing the "whooping" chiefly, the cough in many of the cases lasting for some time after the whooping ceased, and which requires the usual treatment for bronchial catarrh.—*American Journal of Obstetrics and Diseases of Women and Children, Feb.*, 1873.

On the Operative Treatment of Pleuritic Exudations. By Ch. Rauschenberg, M.D., Atlanta, Ga.

Dr. Ludwig Lichtheim, Assistant at the Surgical Klinik at Halle, is the author of a valuable article on this subject, the most important points of which are contained in the following abstract:

Dr. Lichtheim first calls attention to the fact that the improved pathological conceptions of the last ten years, with their correcting and remodeling influences on therapeutical principles generally, have also brought about a material change in the therapeutical efforts of physicians in the treatment of local morbid conditions occurring in the course of internal diseases, and that the old faith in the efficiency of general treatment for the removal of such conditions is fast giving way to an improved system of local therapeutics, in which operative surgery is destined to occupy an important position.

This tendency of the age has affected the operation of thoracentesis and its therapeutical relation to the treatment of pleuritic exudations very essentially, and has demonstrated that it must henceforth be looked upon not as a last resort, or a mere palliative measure, but as a surgical remedy of very great and very general curative usefulness in the treatment of this morbid condition.

Heretofore this operation has almost exclusively occupied the position of a merely palliative measure. Excessive danger of suffocation, caused by the compression of the lung on the diseased side and impeded expansion of the other by the misplaced heart and mediastinum, on the one hand, and the danger threatened from the burrowing of pus when bulging of the intercostal integuments indicated pleural abscess on the other, have so far been, in a majority of instances, the phenomena under which thoracentesis has been performed, as they were the only generally-accepted indications under which this operation was considered applicable.

As a curative measure, aiming directly at the improvement of the morbid condition *per se*, this operation—although simple, safe, painless, and often life-saving—was first practiced and recommended in France by the pupils of the great Trousseau, one of its earliest and most zealous advocates in this sense; but it has only acquired the general acceptation of the medical world in the last few years. The labors of Kussmaul and Bartels, in Germany, have, however, the exclusive merit of having first clearly demonstrated the different relations which this operation as a remedy bears to the different pathological sequels of pleuritis, and have established the leading and now generally accepted principles which govern its use and execution.

The proper use of thoracentesis for the treatment of pleuritic exudations is based upon a correct understanding of the differences in the treatment required by purulent effusions, empyemata, on the one side, and that of non-purulent, merely serous effusions, on the other.

Resorption of the effused serum frequently takes place; but complete resorption of pus, constituting an empyema of any recognizable size, is a very doubtful occurrence, which has at least never been established by actual observation; while it is a well-known pathological fact that purulent deposits remain within the pleural cavity often for very long periods of time, either as fluid pus or a more or less inspissated substance, subject to or engaged in a process of cheesy degeneration, according to the degree of separation of the fluid parts of the pus from its solid morphological elements by resorption of the former.

The possibility of a perforation of the thorax or the pulmonal pleura and lungs, by which the empyema might be emptied and the disease spontaneously cured, cannot be taken into consideration when the question of the necessity of thoracentesis is to be decided, because perforation, if it does take place at all, occurs generally so late, and (particularly when in the direction of the lungs) with such a slow, imperfect and harassing evacuation of the pus by coughing, and such wasting febrile phenomena, that, instead of furnishing a cause for the delay of the operation, it increases the necessity of its performance in order to give additional and more ready drainage to the pus in the direction of the surface, and thus to shorten, and thereby to deprive, the curative process of nature of its dangerous consequences to the organism in general.

After thus establishing the very small probability of a spontaneous cure of empyema, our author arrives at the conclusion that *the accumulation of a sufficiently large quantity of pus in the pleural cavity to admit of plain recognition, furnishes a direct indication for its removal;* and that the old maxim, "Ubi pus ibi evacua," deserves full recognition in these cases.

An early and correct diagnosis, establishing beyond a doubt the existence of a purulent accumulation within the pleural cavity, is therefore imperatively necessary in cases of that kind.

If the usual symptoms of œdema of the affected side of the thorax—redness of the skin in that region, the characteristic type of fever with high evening exacerbations, and more or less developed periodical rigors—are wanting, which is sometimes the case, while the physical exploration of the thorax indicates a pleuritic effusion, puncture of the thorax with an exploratory trocar will always decide whether or not empyema exists.

In all doubtful cases the character of the accumulated fluid should thus be ascertained at once, and if pus is found, thoracen-

tesis should be performed, as delay will always diminish the probability of a recovery.

The frequent incurability of the fundamental disease which has caused the empyema and the high fever connected with it, should never delay, much less set aside, the operation. The effective removal of the accumulated pus will, in far the majority of instances, more than any other therapeutical measure, not only give comfort to the patient for the time he can live, but will frequently protract the fatal issue a longer or shorter period of time, if it does not accomplish a cure, and will always either lessen or check the fever with its wasting influences on the system, as the latter is almost invariably the consequence of the process of suppuration going on within a closed cavity of the organism. The operation within itself is harmless, and if death has followed it in a few instances, it is very probable that it was caused by a continuation of the morbid conditions which now and then occasion sudden death in large pleural effusions.

To prevent the admission of air when the exploring trocar is used, it is always sufficient to let the patient take a full inspiration and retain his breath the moment the trocar is withdrawn.

Our author acknowledges no valid contra-indication of thoracentesis, but such a degree of debility as would necessarily result in death without the operation in a very short time.

The governing idea in its performance must be to have an opening amply large enough to admit free and perfect exit of the pus, and prompt and efficient cleansing of the cavity for a sufficient length of time. The mere puncture with the trocar and canula, with exclusion of the air, does not answer the purpose. It creates too small an opening; the clearing of the cavity by syringe, even through the retained canula, is too tedious, difficult and incomplete, and this method has therefore been almost entirely abandoned, and the operation by free incision—which, although a little more difficult to perform, is certainly a no more dangerous operation than the other—is now generally preferred.

First, an incision, one and a half to two inches long, through the integuments, right in the middle of an intercostal space to avoid the intercostal artery, then division of the muscles, layer by layer, on the grooved probe, is made. If a smaller artery bleeds, the hemorrhage is stopped by digital pressure, but the final perforation of the white, glossy pleura, which either bulges into the aperture of the incision or remains stiff and hard, is not made until all hemorrhage has been entirely arrested, as even an insignificant quantity of blood mixed with the pleural contents, gushing forth through the pleural opening, frequently causes an erroneous impression of danger. If the nature of the contents of the pleural cavity should not have been satisfactorily ascertained before, the insertion of a small trocar in one of the angles of the wound at

this stage of the operation will remove any existing doubt. A free pleural incision, corresponding in size with the superficial one, finishes the operation.

The best locality for the incision, in order to avoid the obstruction of the opening by the previously depressed diaphram, is the fifth or sixth intercostal space between the mammillary and axillary lines.

Marked and immediate relief follows the operation, the respiration becomes free and easy, the fever abates, and this relief remains permanent; while, if mere puncture of the thorax has been made, the old condition of affairs, on account of imperfect drainage of the empyema, is re-established in a very few days, and the patient becomes clamorous for a repetition of the operation.

The after-treatment must necessarily provide for the fulfillment of the general indications of a large abscess. The cavity must be well cleansed, and the pus thereby sufficiently removed twice a day; as decomposition of the pus—manifested by a rising of the pulse and the bodily temperature frequently beyond the degree existing before the operation—takes place within twenty-four to forty-eight hours after the operation in a large number of cases, the pus at the same time assuming a thin, ichorous appearance, and more or less fœtid odor. Dr. Lichtheim has made it a uniform rule to inject into the thoracic cavity twice a day, through a flexible tube, a solution of carbolic acid of one part to one hundred parts of water containing a small quantity of glycerine in order to keep the former in solution, for the purpose of arresting the secretion and decomposition of the pus. He has never observed any unpleasant symptoms under this treatment, although the urine of his patients showed by its darker color that a portion of the carbolic acid was resorbed. Subsulphate of soda, permanganate of potash and iodide of potash in solution—recommended, the first by Kussmaul, the last by Trousseau. and afterwards by Quincke—have manifestly failed in his hands to avert the decomposition of the pus, while the carbolic acid has proved very reliable for that purpose. The fluid to be injected should be warmed within the neighborhood of the usual degree of the bodily temperature before it is used. The half-sitting posture is most favorable to the performance of this procedure, and it is therefore advisable to put the patient in that position, and let him remain in it for some weeks after the operation. As the healing of the incision proceeds, the difficulties which attend thoracentesis by mere puncture from the very commencement, begin to arise and annoy the practitioner. The opening loses its lengthy form, becomes round and smaller, until finally, in spite of the continued application of good large wicks from the beginning, and in spite of repeated dilatation of the opening with laminaria and sponge tents, it will not allow the fluid injected through the permanently remaining flexible catheter to

run out by its side. Then it is time to insert a short double tube in place of the catheter, so that the fluid injected by one of its channels can run out again through the other.

Roser and Quincke have introduced a method and apparatus by which the pleural cavity is washed out by the introduction of air and water alternately, one driving out the other. Dr. Litchtheim describes the apparatus and its mode of operation; but as in our judgment a Davies syringe, attached to one-half of the double tube, resting in the thoracic opening, permits, in a much simpler manner, the alternate introduction of air or water into the thoracic cavity by respectively leaving the suction end out of or putting it into the fluid to be injected, it appears unnecessary to dwell on their mode of accomplishing this object.

Where the edges of the thoracic opening do not hermetically close round the double tube, this method of cleaning the thorax cannot, of course, be used. Quincke substitutes in such cases a gutta percha ring pessary, in the center of which the double canula is hermetically inserted. It admits the exclusion of air by being pressed against the walls of the thorax. He has, in this manner, frequently washed out the pleural cavity immediately after the operation, and claims that it is preferable to the common mode, as it does not require the patient to turn on his side. Changes of position, immediately after the operation, are considered by him fraught with some danger, and he refers the death of one patient to them as the cause. Dr. Lichtheim prefers the common mode of washing out the cavity, through a large opening, and reserves Quincke's method for those cases where the small size of the opening makes it necessary.

The extent to which the several thoracic and neighboring organs, and particularly the lungs, are restored to their normal position, size and physiological function, the cavity diminished and the normal appearance of the thoracic wall re-established, depends upon the age of the patient and the duration of the disease before the operation was performed.

The inclination of the opening to close up manifests itself by the fact that the secretion becomes thin and scant, diminishing to a few drops of a yellow watery fluid during the whole day. On removal of the catheter under these circumstances, it closes up rapidly.

Frequently, however, the reparative process is suspended, the general condition of the patient remains favorable, but the cavity still continues to secrete pus without any prospect of a change. Dr. Lichtheim recommends, under these circumstances, the suspension of the disinfecting injections, as long as the condition of the pus does not demand them, and the use of stimulating ones in their stead, for instance, Lugol's solution, containing one per cent. of iodine, or stronger if required.

In cases where, in consequence of the duration of the empyema, the lungs have lost their faculty to expand, all these means are fruitless, and a permanent thoracic fistula remains.

The establishment of well-defined indications for the operative treatment of non-purulent pleuritic exudations, with exception of those cases where immediate danger of suffocation demands thoracentesis, is much more difficult.

A consideration of all the factors upon which the resorption of such exudations depends—to wit: the acute or chronic character of the disease which has caused it, the condition of the blood of the patient, the character of the exuded fluid, the degree of pressure existing in the pleural cavity, etc.—teaches that it is an entire impossibility to predict, with any reasonable degree of accuracy, the final termination of a pleuritic exudate, and leaves us only in possession of one undeniable fact, to wit: *that large pleuritic exudates are generally resorbed with great difficulty, if resorbed at all, and are, therefore, often adapted to operative removal.*

Dr. Lichtheim further considers that thoracic puncture, properly practiced, is an entirely harmless operation, and states most positively that in a very large number of operations performed or witnessed by him, only in a few instances, after repeated punctures in the same individuals, the fluid became slightly turbid, and contained, microscopically examined, a few more cells; but that it has not been followed, within the scope of his personal observation, in a single instance, by acute purulent degeneration of the exudate.

He arrived at the conclusion that in robust individuals *extensive pleuritic exudations*—where resorption, although not impossible, would evidently be very tedious, and too slow to prevent the accumulation of injurious consequences to the organism—*should be removed by thoracentesis if within the first or second week after the cessation of pain and fever the exudate does not begin to diminish.* The quantity of the exudate can only be correctly estimated, not by its level alone, but by the expansion of the affected side of the thorax, the depression of the diaphragm, the displacement of the mediastinum, and, in left-sided effusions, by the considerable displacement of the heart to the right. In exudates following phthisis or chronic nephritis, the operation is contra-indicated unless immediate danger of suffocation demands it.

One method for the removal of non-purulent pleuritic exudations is now generally accepted. It is that of puncture of the thorax with exclusion of the air, which will enter with each inspiration as soon as the pressure within the pleural cavity is no greater than that of the atmospheric air. This exclusion of air, although the entrance of a few air bubbles by some imperfection of the apparatus is of no consequence whatever,

is essential for the prevention of suppuration within the pleural cavity.

The number of contrivances which have been invented to accomplish this object is not inconsiderable, and several of them are most probably known to every practitioner. Piorry's method is probably the most preferable one.

Dr. Lichtheim warns against the propositions of Hoppe Seiler, who, in order to accomplish complete evacuation of the serum, thought it proper to introduce a diluted solution of chloride of sodium into the thoracic cavity, by aspiration through a gutta-percha tube, to occupy the place of the remaining serum. He considers it by no means certain that such operations, to which the performance of thoracentesis in the warm water bath below the surface of the water belongs, furnish better results than the simple puncture without aspiration of fluid; but holds that if evacuation of the serum by thoracentesis is not followed by a new accumulation of fluid, the remaining serum will be re-sorbed, while the puncture with aspiration proposed by Hoppe Seiler, is not so absolutely harmless as the simple puncture alone, but induces, according to the history of his cases, septic decomposition of the contents of the pleural cavity (piopneumothorax).

When a large trocar is used, the escape of the serum should be frequently interrupted to prevent rupture of the fine capillaries of the newly-formed connective tissue, and a bloody color of the escaping serum should always induce the operator to exercise caution in this direction.

Dr. Lichtheim performs thoracentesis by puncture at the same locality at which he operates by incision for empyema. The simplicity of the operation excludes the possibility of serious accidents. If pus emanates from the canula after the withdrawal of the trocar, the operation by incision should be performed at once. Hemorrhagic exudations, being an evidence of tuberculosis or scirrhus of the pleura, establish an unfavorable prognosis, and where they are found to exist, the escape of the fluid should also be arrested, unless symptoms of suffocation demand its removal.

As soon as the expansion of the lungs commences, an irritation of the small bronchii and vesicles, by the air entering the lungs, causes an obstinate and harassing cough. Hypodermic injections of morphia before the operation will measurably prevent this trouble. Closure of the puncture, which always heals by first intention, is the only dressing needed. Great relief and no fever, or increase of it, where it existed before, follow the operation in the largest number of cases; and, even in the most unfavorable instances, febrile phenomena hardly ever occur, while the effusion, instead of diminishing, reaches within a few days again its former extent. In these cases the patient, who has once

experienced the great relief following the operation, wants it repeated; but it is well enough not to be hasty in complying with his request.

Acute purulent degeneration of the remaining serum occurs very seldom; when it does, the symptoms of empyema set in, and the treatment of that condition becomes necessary.—(*Volkman's Klinische Vortrage, No.* 43, *October*, 1872.)—*Atlanta Med. Journal.*

Neuralgia of the Testicle.

Several years have now elapsed since Dr. Lazarus, of Cnernowitz, reported a number of instances in which spermatorrhœa was accompanied by neuralgia of the testicle. Since then, he has continued to give especial attention to cases of this nature which have come under his notice in hospital and private practice. He finds that in a very limited number of cases only is the entire testicle affected by neuralgic pains; these are commonly limited to the *epididymis*, more particularly the superior portion, together with a part of the *vas deferens*. The left testicle is more frequently affected than the right. The precise pathological changes which take place in the diseased parts have not yet been satisfactorily made out. In a few instances, however, there has been noticed a moderate swelling of the organ, with slight enlargement of the bloodvessels. The predisposing causes of this affection do not differ from those of ordinary neuralgia. It may be the result of idiopathic or traumatic inflammation, or exposure to cold and dampness, or may be induced by the mechanical pressure of some adjacent tumor.

The most common cause, however, of this form of neuralgia is long-continued sexual continence, so that, as would naturally be inferred, the list of this class of sufferers is made up very largely of bachelors. At times, it appears to be a concomitant of approaching impotence, caused here by the engorgement of the bloodvessels and seminal ducts. In such cases, marked relief has been known to follow a natural evacuation of these vessels. In other instances, neuralgia of the testicle makes its appearance in the case of broken down individuals suffering from dyspepsia. Still another cause is the induration which not unfrequently remains behind after a protracted inflammation of the epididymis. In two instances, neuralgia of this organ was found to follow the injection of a strong solution of permanganate of potash and sulphate of copper in the course of a treatment of gonorrhœa. Renal calculi, during their passage along the ureter, may also lead to an attack of this form of neuralgia. In one case seen by Dr. L. the affection was caused by a fall from a lofty scaffolding, by

which the lumbar portion of the spinal column received severe injury, resulting in paralysis of the lower extremities and eventual death.

Finally, neuralgia of the testicle is not unfrequently an accompaniment of varicocele. The affair generally begins with a sensation of pain in the upper portion of the epididymis, which continuing without remission, would point to commencing inflammation of that organ, were it not for the absence of the ordinary signs of inflammation, such as redness and swelling. All doubt as to the real nature of the trouble is very soon removed, however, by the change in the severity of the pain, which now comes on in paroxysms of a burning, boring character, accompanied at times by nausea and vomiting. This pain is renewed and aggravated by motion, or whenever any pressure is applied to the scrotum. Cold applications afford no relief whatever to the sufferer; heat, on the other hand, serves to alleviate the pain, particularly when applied in the form of warm baths. This fact will explain why the patient finds himself more comfortable in heated apartments, such as the ball-room or theatre; and also why the paroxysms are less severe in summer than in winter.

Among the agents recommended for the relief of this form of neuralgia, Dr. L. speaks (*Wiener Med. Presse*,) most highly of sulphate of zinc, given as follows:

R. Zinci Sulphatis, gran. tria;
Aquæ Destillatæ, unc. quinque;
Aquæ Laurocerasi, drach. unam;
Syrup. Cort. Aurantium, unc. semis.

M. Dose—Tablespoonful three times daily.

He also advises the daily injection into the posterior wall of the scrotum of a small quantity of the solution of sulphate of zinc, having the strength of one-half grain to the ounce. In obstinate cases it may be necessary to resort to castration.—*The Clinic.*

Our neighbors of the *Northwestern Christian Advocate* are responsible for the following "copy" which we give as we swallow our theology, without note or comment:

"We give some statements recorded in the *Gazette Hebdomadaire* taken from *Virchow's Archives*, a medical journal published at Berlin:

"A soldier who had killed the colonel of a regiment in cold blood, and whom the severity of Prussian military discipline would have caused to die a hundred deaths had it been possible, was deliberately handed over to the surgeons, by sentence of court-martial,

and was confined in a strong room in the military hospital, entirely in the dark as to the fate which awaited him. He was kept there ready for an emergency which did not fail to occur. A keeper of a beer-cellar in Leipzig, a man resembling, in many respects, the condemned soldier, and who had been seized with acute inflammation of the heart, or rather of its investing membrane, was brought to the hospital to die of that incurable and promptly fatal malady. No sooner had the anticipated death taken place than the dead saloon-keeper was placed on a table by the side of another operating table, on which was the chloroformed but living body of the soldier. Two surgeons, with assistants, proceeded alike in both cases to divide the scalp over the summit of the skull from ear to ear, turn back the divisions, and remove the skull-cap by incisions passing around the skull like a crown. In the soldier, whose carotid arteries had been prepared for compression, these vessels were clamped so as to prevent hemorrhage, and but a few drops of blood were lost during the entire operation. In each the dura-mater was incised, and the hemispheres of the brain were removed by an incision with a sharp, thin-bladed knife, passing above the cerebellum, or a narrow portion of about two inches in diameter called the crura cerebri. The brain of the saloon-keeper, which was sound, the heart disease having left it intact he having been sensible to the last, was transferred to the skull of the soldier, and by an ingenious contrivance, fully detailed in the *Gazette*, the continuity of the arterial and venous tubes was established. The greatest care was taken in securing the natural adaptation of the parts to a fraction of a line, and the skull, having been replaced simply, was held down and in position by the scalp, which was drawn over, and its edges confined by strips of adhesive plaster, and over all was placed a bandage. It was not until several days had passed that the pressure upon the carotid arteries was entirely relieved, although before the skull was replaced the flow of blood in the vessels of the brain was proved to be restored. The chief fear was from the results of inflammation and suppuration, but fortunately neither ensued, and the wounded parts healed kindly. There was from the first no difficulty in feeding the patient, nor was difficulty anticipated, for it is well known that in puppies and kittens in which the entire brain has been removed, sucking and swallowing go on as well as before the operation, and in this case the nerves which preside over deglutition and digestion were far below the point of section. The patient remained in a sound sleep for two weeks, as in a case of apoplexy, the circulation, digestion, and all the vegetative functions of life being uninterrupted. The gradual union of the parts was shown by faint but gradually increasing movements of the limbs, of the jaws, and of the muscles of expression in the face. Speech did not become possible until the close of the third week, and then it was hesitating,

stammering, as a child learns. Although it was evident that the patient tried to utter words and sentences, it was very gradually that the power of intelligible articulation returned.

"The *Gazette* contains the report in a tabular form of the increasing voluntary power over the arms and hands, as measured from day to day by the dynamometer, the measurements given in kilogrammes; also the daily temperature of the limbs, as shown by the thermometer in degrees of centigrade; also the measure of returning sensibility of the fingers and lips, as given by an instrument called an æsthesiometer; but I omit these, as your readers will be interested in the main facts only.

"When speech became intelligible it was found that the soldier, as he seemed, had forgotten entirely his military training and discipline; on the other hand he told, at a formal examination, in the presence of a number of witnesses, the prices of all the wines and beers, such as the saloon-keeper had been in the habit of buying and selling, manifesting the unimpaired cerebral activity of the latter. His memory recalled the saloon-keeper's relatives, friends, and customers, whom he called by name. The soldier had been ugly, taciturn, revengeful; he now had the saloon-keeper's frankness, and even garrulity, in spite of his stammering utterance. He was totally blind. Although the nerves of smell and sight had been approximated in the operation, they failed to unite. It was both sad and strange to see and hear the soldier groping in his infirmity of blindness and giving proof of all the patient endurance and goodness of heart, which had made the saloon-keeper deservedly esteemed and prosperous. These are the main facts in the case as far as detailed in the *Archives*, but the subject of experiment presents so many important problems of the relation between blood and brain, of heart power and nervous energy, that we may well be assured that no facts of interest in the changed condition of the culprit will be permitted to escape notice and record. A grave point of discussion is, whether he must still be considered a criminal and suffer execution as a guilty soldier, or shall be pensioned and liberally cared for in his infirmity as a guiltless and much suffering beer-seller. Public sentiment is divided. The Emperor William's professors of metaphysics in the Emperor's universities, say it is clearly a case of Ego and non-Ego, and the people seem willing that the matter should rest there as far as the metaphysical aspects of the question are concerned."

Editors' Book Table.

[NOTE. — All works reviewed in the columns of the CHICAGO MEDICAL JOURNAL may be found in the extensive stock of W. B. KEEN, COOKE & Co., whose catalogue of Medical Books will be sent to any address upon request.]

BOOKS RECEIVED.

The Microscope and Microscopical Technology: a Text Book for Physicians and Students. By Dr. HEINRICH FREY, Professor of Medicine in Zurich, Switzerland. Translated from the German and Edited by GEORGE R. CUTTER, M.D., Clinical Assistant to the New York Eye and Ear Infirmary. Illustrated by 343 Engravings on Wood; and Containing the Price Lists of the Principal Microscope Makers of Europe and America. From the Fourth and last German Edition. New York: William Wood & Co., 27 Great Jones Street. 1872. Pp. 658. Cloth, $6.00.

In the January No. of the JOURNAL is briefly noticed the reception of this book. Since some one of our professional friends borrowed and forgot to return our copy of Beale's "How to Work with the Microscope," our library has mourned over a *hiatus valde deflendus.* There was an "aching void." But all evils have their compensations. In this book of Prof. Frey we find the whole matter "posted up to date." The volume is brought out in elegant style, and, as it should be, is profusely illustrated. The arrangement is satisfactory in every particular, giving first, the Theory of the Microscope, then successively: Apparatus for Measuring and Drawing; the Varieties and Modes of Testing; Use and Methods of Examination; the Preparation of Objects; Fluid Media and Chemical Reagents; Methods of Staining, Injecting, etc.; Mounting and Arrangement of Objects—the eleven concluding chapters being devoted to a careful delineation of the microscopy of the fluids and solids of the human body. A price list of the leading manufacturers follows the index. The more carefully we examine this book, the more thoroughly are we pleased and delighted with it.

The microscope is now the indispensable adjunct of the physician's study, but without instruction in its use, the practitioner will find himself sadly disappointed in using it.

Club-Foot: Its Causes, Pathology, and Treatment. Being the Essay to which the Jacksonian Prize for 1864, given by the Royal College of Surgeons, was awarded. By Wm. Adams, F. R. C. S., Surgeon to the Northern Hospital, and to the National Hospital for the Paralyzed and Insane, etc., etc. With one hundred and six Wood Engravings, and six Lithograph Plates. Second Edition. Philadelphia: Lindsay & Blakiston. 1873. 8vo. Pp. 464. Cloth, $6.00.

This is a superb work and should be in the hands of every surgeon in the country, as it is by far the most complete and instructive treatise on the subject. By the assistance of the numerous and capital illustrations everything is presented in the most perfect manner to the eye and the understanding. The present edition has been carefully revised, many chapters materially added to, especially the one on Preparation of the Tendons, and five new lithograph plates added.

Contributions to Mental Pathology. By J. Ray, M.D., Author of "Medical Jurisprudence of Insanity," and Mental Hygiene. Boston: Little, Brown & Company. 1873. Pp. 558.

Most of the present volume has already appeared in print, and the general opinions of Dr. Ray are well known to the professional public. The matter of which it is composed, however, has been thoroughly revised, a scientific arrangement adopted, and a portion of new material added. It is well considered, well digested, and, while it is a very important treatise for the professional man, it will be found well worthy the attention of the intelligent general reader.

Manual of Chemical Analysis as Applied to the Examination of Medicinal Chemicals. A Guide for the Determination of their Identity and Quality, and for the Detection of Impurities and Adulterations. For the Use of Pharmaceutists, Physicians, Druggists, and Manufacturing Chemists, and of Pharmaceutical and Medical Students. By Frederick Hoffman, Ph. D., Pharmaceutist in New York. New York: D. Appleton & Co., 549 and 551 Broadway. 1873. 8vo. Pp. 393.

This is one of the most useful books of the season. The information it contains has been collected from a wide variety of sources inaccessible to most readers. It has been compiled with special reference to the latest Pharmacopœias of the United States, Great Britain and Germany.

The work is divided into two parts, the first of which treats of Operations and Reagents; Reagents; Course of Qualitative Analysis, and Volumetric Analysis; the second, discusses the Medicinal Chemicals and their Preparations in detail. Numerous illustrations are given throughout the volume, and to the whole is appended a series of Tables of great practical service, and a copious Index. We cannot too highly recommend this treatise to our readers. It fills a want we have ourselves long experienced.

Illustrations of the Influence of the Mind upon the Body, in Health and Disease. Designed to Elucidate the Action of the Imagination. By DANIEL HACK TUKE, M.D., M.R.C.P., Joint Author of "The Manual of Psychological Medicine," etc., etc.

"There is not a natural action of the body, whether voluntary or involuntary, that may not be influenced by the peculiar state of the mind at the time."—JOHN HUNTER.

Philadelphia: Henry C. Lea. 1873. 8vo. Pp. 415. $5.50.

A book very much needed—worth more, to the thoughtful and judicious physician, than a whole shelf-full of volumes on Materia Medica. Dr. Tuke is already well known, to the reading portion of the profession, through the excellent joint treatise, by Dr. Bucknill and himself, on Insanity. The present essay is more limited in its scope, but brimful of matter indispensable to the professional scholar. The author has collected, from a wide variety of sources, cases, authentic in character, illustrative of the influence of Mind upon the Body. These are supplemented by a great number falling under his own observation, and the whole systematically arranged, in accordance with modern physiological and psychological ideas. The mental influence is shown as causing derangement of sensation, motion, and the organic functions, and its therapeutic importance pointed out. The next effort is to ascertain the channels of this influence, and finally to elucidate, as fully as possible, the exact nature of what is usually designated the Imagination. The book is methodically divided and written in a pleasing style, devoid of abstract and foggy metaphysical speculations, clear and instructive. To employ a phrase we remember to have seen used before, "No library can be complete without it." Most certainly no one can rise from its perusal without a feeling of satisfaction with the book and gratitude to the author. Incidentally, we have noticed, that whilst lying upon the office table,

with the other literary, scientific and professional works, latest productions by the press, this one has been the most noticed of all, and solicitations to borrow it most frequent.

Fistula, Hæmorrhoids, Painful Ulcer, Stricture, Prolapsus and other Diseases of the Rectum: their Diagnosis and Treatment. By WILLIAM ALLINGHAM, F.R.C.S.E., Surgeon to St. Mark's Hospital for Fistula, etc.; late Surgeon to the Northern Hospital. Second edition, revised and enlarged. Philadelphia: Lindsay & Blakiston. 1873. Pp. 265.

This is a capital addition to the literature of the topics mentioned in the title. It is well written, in good vigorous English, and we fully endorse the opinion of a contemporary, that there is "no book on this special subject that can at all approach Mr. Allingham's in precision, clearness and practical good sense."

A Treatise on Apoplexy, Cerebral Hemorrhage, Cerebral Embolism, Cerebral Gout, Cerebral Rheumatism, and Epidemic Cerebro-Spinal Meningitis. By JOHN A. LIDELL, A.M., M.D., Prof. of Anatomy in the National Medical College, Washington, D. C.; formerly Surgeon to Bellevue Hospital, New York, etc., etc. New York: Wm. Wood & Co., 27 Great Jones Street. 1873. 8vo. Pp. 395.

Dr. Lidell elaborates in this volume the ante and post-mortem histories of sixty-two cases of cerebral diseases. Of these, forty-four are original, and besides them many original cases are briefly cited. A special chapter is devoted to *Infantile Apoplexy*, one to the so-called *Pulmonary Apoplexy*, and the closing chapter discusses Cerebro-Spinal Meningitis, which latter disorder he very properly considers a local "inflammation," excited by a specific poison. The author informs us that he started out with the purpose of writing nothing more than an article, or series of articles, for the *American Journal of Medical Sciences*, but the matter soon accumulated to such a bulk that he abandoned that idea and concluded to present it in book form. The result is the volume before us, which is rich in well prepared material for study. Aside from his original descriptions and views, the author cites numerous authorities, which will give the reader an excellent bibliography of the subject. At the present time there is no other treatise on the subjects discussed so fully up to the period. In a

subsequent edition we hope to find some minor blemishes corrected, so that its real merit may be more palpable.

A Treatise on the Theory and Practice of Obstetrics. By Wm. H. Byford, A.M., M.D., Professor of Obstetrics and Diseases of Women and Children in the Chicago Medical College, etc., etc. Second edition; thoroughly revised. New York: Wm. Wood & Co., 27 Great Jones Street. 1873. 8vo. Pp. 469. Illustrated.

On the appearance of the first edition of this treatise, we spoke of its general merits in commendatory terms, and foretold its probable popularity. The speedy exhaustion of that edition, and the appearance of the present volume so soon, prove our words correct. Our eminent townsman may well be gratified at the success achieved. Some of our readers are aware of a sharp attack made upon the work by a "hot-livered grammarian," in an eastern magazine, and it is to be confessed the signs of haste in preparation (as must almost of necessity be the case when so busy a man as Prof. Byford writes) were abundantly obvious in that edition. But in the volume before us these blemishes have disappeared, and it can safely challenge the trivial verbal reprobation of the eastern critic. Of its claims as a work of reference and standard authority there can be no room for doubt.

Santo Domingo, Past and Present: With a Glance at Hayti. By Samuel Hazard, Author of Cuba with Pen and Pencil. Maps and Numerous Illustrations. New York: Harper & Brothers, Publishers, Franklin Square. 1873.

Mr. Hazard visited the island at the same time with the United States Commission. His description is given in an easy reportorial style, which makes reading also easy. Perusal of it at odd hours, in the terribly cold days of the last month, has almost converted us to annexationists. The variety and perfection of climate embraced in the small space of this one island ought to make it exceedingly valuable as a general sanitarium for physical invalids, as well as the political ones who seek its possession.

PAMPHLETS, ETC.

The Half-Yearly Abstract of the Medical Sciences. Being a Digest of British and Continental Medicine, and of the Progress of Medicine and the Collateral Sciences. Edited by WILLIAM DOMETT STONE, M.D., F.R.C.S. (Exam.) Vol. LVI, January, 1873. Philadelphia: Henry C. Lea. 1873. $2.50 per annum, in advance. Single volumes, $1.50. Pp. 296.

Half-Yearly Compendium of Medical Science. Part XI. Philadelphia: S. W. Butler & Co., 115 South Seventeenth Street. Pp. 280. $3.00 per annum. Single numbers, $2.00. For the first ten numbers, $12.00.

Report of the Pennsylvania Hospital for the Insane, for the Year 1872. By THOMAS S. KIRKBRIDE, M.D., Physician and Chief Superintendent. Published by order of the Board of Managers. Philadelphia: 1873.

Free Parks and Camping Grounds: Or, Sanitariums for the Sick and Debilitated Children of Large Cities during the Summer Months. By J. M. TONER, M.D., Washington, D. C.

Infant Mortality. By H. C. HAND, M.D., St. Paul, Minn., Ed. N. W. Medical and Surgical Journal.

The New Operation for Coloring Corneal Opacities. By R. J. LEVIS, M.D., Surgeon to the Pennsylvania Hospital, and to the Wills Ophthalmic Hospital.

The Cell. (Reprinted from "The Lens.") Pp. 16. By I. N. DANFORTH, M.D., Pathologist to St. Luke's Hospital, etc.

Ryan's Philosophy of Marriage. In its Social, Moral and Physical Relations; with an Account of the Diseases of the Genito-Urinary Organs, etc. By MICHAEL RYAN, M.D., Member of the Royal College of Physicians. 12mo. $1.00.

Walker on Intermarriage. Or the Mode in which, and the Causes why, Beauty, Health and Intellect result from certain Unions, and Deformity, Disease and Insanity from others. With Illustrations. By ALEXANDER WALKER, Author of "Woman," "Beauty," etc., etc. 12mo. $1.50.

A Report to the Board of Health of the City of Chicago. On the necessity of an extension of the sewerage of the city. By JOHN H. RAUCH, M.D., Sanitary Superintendent. Published by order of the Board, Chicago. 1873. Pp. 22.

City of Des Moines, Iowa. Business Opportunity and Desirable Location.

McKesson & Roberts' New York Prices Current, of Drugs, Druggists' Articles, Chemical and Pharmaceutical Preparations, Proprietary Medicines and Perfumery, Sponges, Corks, Dyes, Paints, etc., etc. Pp. 160.

An elaborately and elegantly gotten up catalogue, profusely illustrated, and from the beautiful vignette serving as frontispiece, sent out by a fine looking quartette of gentlemen. The fifth partner probably has not yet earned his spurs.

Editorial.

A New Journal.

We welcome to our exchange list THE SANITARIAN: a Monthly Journal. A. N. BELL, M.D., Editor. Published by A. S. Barnes & Company, New York and Chicago. Pp. 48. Thirty cents single copy—$3 a year in advance. The object in chief of the SANITARIAN will be to awaken public attention to the extent of the field of sanitary science and indicate how beneficently it may be cultivated. The Prospectus remarks:

"This will be done by showing the amount of ill health and mortality from preventable causes of disease; by pointing out the nature of those causes, and the way in which they operate; by showing that such causes are removable; and by exhibiting improved health, longevity and happiness as the fruits of their removal.

"The laws of physiology and general pathology will be kept in view, as the basis of health; and by which hygiene constitutes a department of science which the medical profession can advantageously share with the public, or apply to individuals according to circumstances. The detail of these relations will involve questions of manifold significance, and many of them of the utmost importance to human health.

"The practical questions of State Medicine: the health of armies and navies, marine hygiene, quarantine, civic cleanliness, water supply, drainage and sewerage. Sanitary architecture: light, space, warming and ventilation. Climate and domicile: epidemic, endemic and hereditary diseases. Occupation: exercise and habits, food and beverages, in all varieties of quality and quantity. In short, whatever thing, condition or circumstance is in rapport with, or antagonistic to, the most perfect culture of mind and body will be considered legitimate matter for the SANITARIAN to discuss, advocate, condemn or reject at the *bar of health*."

Among the indorsers of the Editor, and his object, we find such well known names as Drs. Stephen Smith, S. O. Vanderpoel (Health Officer, Port of New York), Willard Parker, S. G. Armor, Wm. A. Hammond, J. Ordronaux, A. Flint, Jr., etc., etc.

It is unnecessary for us to remark that the most of the existing journals ostensibly devoted to hygiene and sanitary movements, are in fact travesties. Their main idea seems to be to tickle the public fancy, with crude mixtures of stale truths, and dogmas none the less offensive because "sent into this breathing world scarce half made up" rather than worm-eaten or fossilized. There are two classes in the public which such journals as the one before us may well enlighten—the one which trusts in everything, and beyond all due bounds, in medical men, and the other which is largely or altogether sceptical as to their value. There is vastly more in medical science (including sanitary science) than many believe, and there is vastly less than either professional or lay optimists have a notion.

Hygiene and Materia Medica.

In a recently published note, the eminent surgeon and teacher, Willard Parker, M.D., uses these words:

"Heretofore, *materia medica* has almost monopolized the attention in our schools of medicine, as if that were the all important agent in the cure of disease."

Against which proposition we earnestly protest as doing gross injustice to many, if not the majority, of the schools. The attention of Prof. Parker to the duties of his extensive practice, and those of his particular department of teaching, has probably prevented his notice of the fact that for a long time, PHYSIOLOGY and its necessary inferential teachings, have taken the leading position in the colleges. Educated medical men, for years, have been investigating the relations of facts, and seeking the laws. Mere medicine seekers and givers have fallen into something like contempt—not for the paltry reason suggested by Professor Parker in these words:

"During the last forty years a form of practice has been introduced which has demonstrated the little value of *medicine alone*, and the public are now demanding more knowledge upon the laws of life and health."

Theoretically and practically, Homœopathy deals constantly and largely in medicine giving. They have specifics for every ill that flesh is heir to, and their *public* believe homœopathic medicines are really "potencies." Neither the "public" nor the profession are under obligations to Homœopathy for their greater concern about sanitary laws.

Medical science advances, and included sanitary science advances, because its study is more and more approximating the methods whereby other sciences are advanced. The *asinus portaus mysteria*, whether ridden by Galen or Hahnemann, has been sent to the rear, even of the baggage-wagons, of the grand army of progress.

The notion of the entity of disease still infects some minds, leading them to hunt for new specifics and panaceas, but the thinking men, the inquiring men, the experimenting men, are wresting from Nature the secrets of Health and Disease, just as Huxley, Tyndall and Agassiz are seizing the grand truths of physical science.

It is sincerely to be hoped that Prof. Parker and those who entertain similar opinions may look over the facts a little more closely, before affording any more such "hasty plates of soup" for the delectation of the infinitesimal crew.

NOTICES.

American Medical Association.

OFFICE OF PERMANENT SECRETARY,
1400 Pine Street, S. W. cor. Broad, Philadelphia.

The Twenty-Fourth Annual Session will be held in St. Louis, Mo., May 6, 1873, at 11 A. M.

The following committees are expected to report:

On Cultivation of the Cinchona Tree. Dr. Lemuel J. Deal, Philadelphia, Pa., Chairman.

On Measures to Prevent the Extension of Diseases of Inferior Animals to Man, and the Sanitary Measures to Arrest the Progress of such Diseases in Animals. Dr. A. W. Stein, New York, N. Y., Chairman.

On the Treatment of Fractures. Dr. Lewis A. Sayre, New York, N. Y., Chairman.

On Gunguillia as a Substitute for Quinia. Dr. Wm. Chew Van Bibber, Baltimore, Md., Chairman.

On Gynæcology. Dr. Montrose A. Pallen, St. Louis, Mo., Chairman.

On the Renewal of Prescriptions without Authority, and on the Relations of Physicians and Druggists. Dr. R. J. O'Sullivan, New York, N. Y., Chairman.

On Vaccination. Dr. T. N. Wise, Covington, Ky., Chairman.

On Skin Transplantation. Dr. J. Ford Thompson, Washington, D. C., Chairman.

On some Diseases peculiar to Colorado. Dr. John Elsner, Denver, Col., Chairman.

On Correspondence with State Medical Societies. Dr. N. S. Davis, Chicago, Ill., Chairman.

On National Health Council. Dr. Thomas M. Logan, Sacramento, Cal., Chairman.

On Nomenclature of Diseases. Dr. Francis Gurney Smith, Philadelphia, Pa., Chairman.

On American Medical Necrology. Dr. J. D. Jackson, Danville, Kentucky, Chairman.

On Suggestions on Medical Education. Dr. A. M. Pollock, Pittsburgh, Pa., Chairman.

On Medical Education. Dr. William Carson, Cincinnati, Ohio, Chairman.

On Medical Literature. Dr. Austin Flint, New York, N. Y., Chairman.

On Prize Essays. Dr. John S. Moore, St. Louis, Mo., Chairman.

On Plan for better Arrangement of Sections, and more Rigid Examination of Papers offered for Publication. Dr. E. L. Howard, Baltimore, Md., Chairman.

On Ethics. Dr. H. F. Askew, Wilmington, Del., Chairman.

On the Climatology and Epidemics of—

Alabama, Dr. T. C. Osborne ; Arkansas, Dr. G. W. Lawrence ; California, Dr. W. H. Williams ; Colorado, Dr. R. G. Buckingham ; Connecticut, Dr. J. C. Jackson ; Delaware, Dr. L. P. Bush ; District of Columbia, Dr. J. W. H. Lovejoy ; Georgia, Dr. G. M. McDowell ; Illinois, Dr. David Prince ; Indiana, Dr. Dugan Clark ; Iowa, Dr. G. M. Staples ; Kansas, Dr. Tiffin Sinks ; Kentucky, Dr. L. P. Yandell, Sr. ; Louisiana, Dr. S. M. Bemiss ; Maine, Dr. S. H. Tewksbury ; Maryland, Dr. C. H. Ohr ; Massachusetts, Dr. E. Cutter; Michigan, Dr. S. H. Douglass ; Minnesota, Dr. Charles N. Hewitt ; Mississippi, Dr. S. V. D. Hill ; Missouri, Dr. T. B. Lester ; New Hampshire, Dr. G. A. Crosby ; New Jersey, Dr. E. M. Hunt ; New York, Dr. Gouverneur M. Smith ; North Carolina, Dr. E. Burke Haywood ; Ohio, Dr. J. A. Murphy ; Oregon, Dr. Horace Carpenter ; Pennsylvania, Dr. W. L. Wells ; Rhode Island, Dr. Edward T. Caswell ; South Carolina, Dr. M. Simmons ; Tennessee, Dr. W. K. Bowling ; Texas, Dr. S. M. Welch ; Vermont, Dr. G. B. Bullard ; Virginia, Dr. H. A. Claiborne ; West Virginia, Dr. H. W. Brock ; Wisconsin, Dr. J. K. Bartlett.

Physicians desiring to present papers before the Association should observe the following rule:

"Papers appropriate to the several sections, in order to secure consideration and action, must be sent to the Secretary of the appropriate section at least one month before the meeting which is to act upon them. It shall be the duty of the Secretary to whom such papers are sent, to examine them with care, and, with the advice of the Chairman of his section, to determine the time and order of their presentation, and give due notice of the same."

Officers of Sections.

Chemistry and Materia Medica.—Drs. R. E. Rogers, Philadelphia, Pa., Chairman; Ephraim Cutter, Boston, Mass., Sec.

Practice of Medicine and Obstetrics.—Drs. D. A. O'Donnell, Baltimore, Md., Chairman; Benjamin F. Dawson, New York, N. Y., Sec.

Surgery and Anatomy.—Drs. Edward Warren, Baltimore, Md., Chairman; W. F. Peck, Davenport, Iowa, Sec.

Meteorology and Epidemics.—Drs. George Sutton, Aurora, Indiana, Chairman; Elisha Harris, New York, N. Y., Sec.

Medical Jurisprudence, Hygiene and Physiology.—Drs. S. C. Busey, Washington, D. C., Chairman; A. B. Arnold, Baltimore, M.D., Sec.

Psychology.—Drs. Isaac Ray, Philadelphia, Pa., Chairman; John Curwen, Harrisburg, Pa., Sec.

Amendments to be Acted On.

(to constitution.)

Resolved, That the United States Marine Hospital Service be placed in the same relative position in the American Medical Association as the Medical Department of the United States Army and Navy.

And that in paragraph 2, of the 2nd section, after the words "army and navy," the words "and the United States Marine Hospital Service" be inserted.

(to by-laws.)

Sec. III.—*Standing Committees.*

That, instead of a report on Medical Education, Medical Literature, and Climatology and Epidemic Diseases, there shall be annually delivered before the Association, at its general meetings, an address in medicine, an address in surgery, and an address in midwifery, or the diseases of children, the lecturers to be appointed this year by the President; afterwards by the Committee on Nominations.

Also, in section 6, after the words, "the chiefs of the bureaus of the army and navy," be inserted "and the supervising surgeon of the United States Marine Hospital Service."

Secretaries of all medical organizations are requested to forward lists of their delegates, as soon as elected, to the Permanent Secretary.

Wm. B. Atkinson, M.D., Permanent Secretary.

No. 1400 Pine Street, Philadelphia.

We cheerfully call attention to the following circular:

Medical Register and Directory of the United States.

Work on this important publication, which was delayed by illness, is now resumed with energy, and it will be issued as soon as the vast amount of material can be collected and arranged. The *Register and Directory* will contain as complete a list of the medical men in the United States, with their professional status, as can be obtained by personal application to each, and from other sources.

Also, a complete medical history of each State, including all its medical institutions, societies, etc., and all medical legislation. Nothing will be omitted that will be of possible benefit to the profession. The co-operation of medical men in every section of the country is earnestly solicited in replying to the circulars sent out, and in *giving brief outlines of the history of medical institutions, hospitals, colleges, etc., and of State, and the more important local medical organizations.*

Circulars will be sent out hereafter *by States*, and announced through the medical journals. They *have been sent* to the following States and Territories, viz.: Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Dakotah, Delaware, District of Columbia, Florida, and Georgia. In *March*, they will be sent to Illinois, Indiana, Iowa, Kansas, Kentucky, and Louisiana, and all the remaining territories.

IMMEDIATE ANSWERS are requested, and prompt notification if circulars are not received.

Physicians are particularly requested to make as full replies as possible to the questions in the circular.

☞ Medical Journals please notice.

S. W. BUTLER, M.D., 115 S. Seventh St., Philadelphia.

To American Publishers and Authors.

There are many American Books, Pamphlets, Maps, etc., so interesting, important, special and unique, and therefore so deserving of wide recognition, that there would undoubtedly be a considerable demand for them in foreign countries, if public attention were there properly directed to them.

This I believe I am in position to do, and thus open out, in a measure, the market *outside America* for *Original American Literature* by appending to my CATALOGUE OF AMERICAN PERIODICAL LITERATURE a list of *original* American publications (including translations, but *excluding all reprints*).

I should regard such Appendix simply as an experiment which could not be perfected on the first attempt. However, should the reception of this List abroad warrant it, I would, in a second edition, aim at greater completeness.

The value of such List of Books, etc., will be considerably enhanced by an *Index* in which the *subject-matter* of each will be found registered, so that on looking for any *special* subject one would be referred to the various publications treating of the same.

I desire especially to enumerate *original* American publications in the following departments:

American Antiquities, Bibliography, Biography, Education (exclusive of School Books,) Geography, History, Jurisprudence, Languages, Politics, Statistics, and other important matters specially *American*.

Theology (of all Schools and Sects), Philosophy, Medicine and Surgery, Natural History, Chemistry and Pharmacy, Natural Philosophy, Mathematics and Astronomy, Modern Languages and Philology, (exclusive of School Books), Architecture, Engineering, Manufactures, Mechanics, Military and Naval Science, Commerce and Finance, Rural and Domestic Economy, Fine Arts and Music, Secret Societies, Spiritualism, Atlases, Maps and Charts, Views of American Scenery.

Publishers or authors desirous of having their publications inserted in my Catalogue, and in the Index, will please apply to me for the requisite number of blank forms, which must be carefully filled up, and returned to me without delay. E. STEIGER.

New York, 1873, Feb. 5th.

Appeal of the Philadelphia Obstetrical Society for Aid in the Formation of a Museum of Distorted Pelves, Obstetrical and Gynæcological Instruments.

At a recent meeting of the Philadelphia Obstetrical Society, it was decided to establish a Museum, for the collection of deformed and distorted Pelves, and for the preservation of Obstetrical Instruments possessing historical value, or illustrating new methods of treatment.

The Society was led to take this action for these reasons :

1st. No subject at present possesses more interest to the obstetrician than the study of the various deformities of the Pelvis, their mode of production, their influence on the process of parturition, and the principles which should guide the accoucheur when operative interference is deemed necessary.

The Profession is gradually becoming more and more convinced of the influence of contractions, more or less marked, in causing not only tedious and difficult labors, but also in the production of mal-presentations and of many of the accidents of labor.

At present there does not exist any extensive collection of Female Pelves, by which a comprehensive study of this subject can be successfully undertaken. Feeling, therefore, the importance of such observation, the Society proposes to establish a MUSEUM, having this object in view, and would therefore earnestly solicit such specimens of contracted Pelves as may be in the possession of members of the Medical Profession, who may be willing to yield the pleasure of individual possession, in order to assist in forming a collection which will allow a wider and more comprehensive survey of this subject. If the original specimen cannot be sent, casts or photographs are solicited. In certain cases, possessing unusual interest, the Society is prepared to offer a pecuniary recompense, should this be desired.

2nd. Recognizing the fact, that various Instruments, designed for Obstetric Manipulations, or for the performance of operations in Uterine Surgery, having been superseded by new and improved models, now possess only an historical

interest, the Society has determined to collect such instruments and preserve them, as illustrating the progress of this branch of our art in America. We would also warmly urge upon the inventors of new or modified instruments, and upon Surgical Instrument Makers in general, the desirability of presenting to the Society specimens of Instruments, Pessaries, and special mechanical contrivances, which they may be desirous of bringing before the Profession.

All objects, whether embraced in the first or second class, will be conspicuously placed in the Museum of the Society, after having been labeled with an explanatory description, and with the name of the donor.

They will also be carefully preserved, open to the inspection of all interested in the support and advancement of Obstetrics and the kindred branches of Medicine.

All objects for the Museum may be sent to the Secretary of the Society, Dr. J. V. INGHAM, No. 1342 Spruce Street, Philadelphia, who will at once acknowledge their receipt, and will gladly furnish such additional information as may be desired.

By order of the Society. WM. GOODELL, M.D., President.

WM. F. JENKS, M.D.,
J. V. INGHAM, M.D.,
HORACE WILLIAMS, M.D., } Committee.

OBITUARY.

Dr. WILLIAM HENRY PALMER, the subject of this memoir, was born in Morgan County, Illinois, December 24th, 1849, and died of small-pox, at Leroy, Ill., March 5th, 1873.

Dr. Palmer leaves a mother and five brothers to mourn his loss. The oldest of his brothers is Gen. Joseph B. Palmer, of Murfreesboro', Tenn., whose name was before the constitutional convention of his district for Congressional honors, but withdrawn in favor of John M. Bright, the present incumbent.

In 1868, Dr. Palmer selected medicine as his profession and entered upon his studies with Dr. R. E. McVey, at Waverly, Ill., where he remained two years in close application to study, giving especial attention to the study of anatomy. Dr. Palmer's genial disposition and insinuating manner made him socially more attractive, and secured for him the universal respect of all with whom he associated, and the love of his intimate friends. He was, indeed, a young man of true merit and of unblemished character.

He was a member of the M. E. Church at Waverly, Ill., and was noted for his devotion to the interests of christianity and the church.

In the fall of 1869–70 he attended his first course of lectures in Rush Medical College. On account of the great fire he was prevented from completing his course of studies in the College until 1873. Few men ever give promise of a more useful and honorable life than did Dr. Palmer. *Requiescat in pace.*

R. E. McVEY.

Waverly, Ill., March 25, 1873.

THE

Chicago Medical Journal.

A MONTHLY RECORD OF

Medicine, Surgery and the Collateral Sciences.

EDITED BY J. ADAMS ALLEN, M.D., LL.D.; AND WALTER HAY, M.D.

VOL. XXX. — MAY, 1873. — No. 5.

Original Communications.

ARTICLE I.—*The Use of the Speculum.* A Paper read before the —— Medical Society. By ——.*

Your Committee, in making their report upon Diseases of Woman and Obstetrics, have thought best not to be sternly restricted to any methodical order, but to submit a report of such cases as will be most likely to furnish the greatest amount of interest and practical information, assuming that all diseases accumulate or increase in interest proportionally as they are of frequent occurrence. Of all the various callings or professions of life none so imperatively demands a clear head, a self-reliant, thinking, practical mind, as the profession of medicine; and more particularly so at this present age, in these special branches.

From the days of Celsus, in no period has the practice been as difficult, unsettled and complicated, as at the present, not only in the practice of medicine, in the strictly modern meaning of that term, but diseases of woman and obstetrics as well. In the early

* The Author's name being on another slip as sent to us, has unfortunately been mislaid. Will he please notify us? ED.

history of medicine, the simple theories and remedial appliances had but little influence either in aiding or opposing the efforts of nature; the present age is ripe with theories, full to repletion with means and appliances, theories speculative, antagonistic, and dangerous; in some instances aiding, in others thwarting every effort and purpose of nature; remedies potent, harmless and poisonous, and of these latter their name is legion. Is it possible for any one to enter this vast field of chaos, in search of truth, without a mind and will to think and act for himself?

But perhaps a glance at the theories and practice of the present time will better elucidate the many difficulties the physician has to encounter. The great ambition of the physician of this modern age is alone gratified when he gives free scope to his mental powers in the development of some new theory, disease, instrument or remedy; especially in diseases of woman and obstetrics. And is it not the observation of every physician, that whether actuated by a desire to emulate either himself or the profession, this undue effort tends more largely to the obstructing of the medical pathway than to make plain and practical the duties of the physician? As an instance of this fact, you will pardon me for referring to this observation, made by a distinguished European author to his class. He says, "The usual curriculum of study given in the schools is sufficient to enable any one with ordinary practical ability to diagnose all common or ordinary diseases, but the detecting of diseases peculiar to woman, in their complicated and obscurer shades, furnishes a condition involving questions of the most intricate and important nature." These teachings are well intended to inculcate impressions perfectly erroneous and false.

Now, it is true, that the distinctive peculiarities of the female constitution have from the earliest morning of the healing art in every important era in the history of the great past, and perhaps for all time to come, will be regarded of peculiar interest and may be well worthy especial consideration and attention. But after all these long years of toil, of the most earnest study and microscopic inquiry, laboring constantly and incessantly to bring before the medical world some peculiar unknown pathological condition common alone to the uterine organs, we are left to retrace the stream of medical science over which we have been so uncon-

sciously gliding, back to the anatomist and physiologist, to inquire of them, what *is* there peculiar or different in the structure or phenomena of these organs to necessitate such unlimited straining and labor? What *are* these peculiar diseases referred to, masked in shades obscure? Is it *true* that the arteries, veins, nerves, lymphatics, or any part of the whole parenchymatous tissue of the uterine system, differ so materially in their anatomical structure in the uterus from that of any other part of the body as to make *it* subject to diseases peculiar to itself? That diseases of the uterus seem at times to be disguised in shades obscure and difficult of detection, no one will pretend to deny, and neither will it be denied that all other organic lesions of the female body are at times equally involved in obscurity. But to attempt to account for these anomalous conditions upon the hypothesis of there being a disease peculiar to that organ, not well understood, as the learned gentlemen would have us believe, either in pathology or treatment, only by physicians of metropolitan fame, is assuming a position, to say the least of it, not entitled to much credulity from physicians of reading and bedside observation. The deep anxiety, the earnest solicitude and care, which has incited the true physician to spend many a long and tedious hour at the bedside interpreting these morbid and distrustful phenomena, the terrible writhings and contortions of every muscle of the body, or, indeed, any of the protean forms of hysteria, inclusive of the false phases alluded to, ask no better solution of their true nature than that there is predominating within woman, a delicate, *finely developed, highly excitable nervous condition*, and in consequence of which alone, she is largely predisposed to *diseases* of a *nervous character*, and not so much to mysterious and not-well-understood organic disease, and the uterus being a very vascular and highly nervous organ, when diseased, through its direct relationship with the great sympathetic nervous system, would very naturally call into sympathy other members of the same body; indeed, no fact is more evident to the practitioner than that it is capable of exercising a dread and baleful influence on every organ in the body, no matter how remote from the true seat of the disease, and not only does it extend its influence throughout her physical organization, but in many instances her mind, body and very soul suffer simultaneously; and herein consists the great and only difficulty, if indeed it

must be so regarded, in the diagnosis and treatment of diseases belonging to this class. But ever holding before the mind the various pathological conditions and phenomena likely to result from, and as perhaps we might say, are the natural and inevitable sequence of, diseases of the uterus, together with a careful and vigorous study of the temperament, idiosyncracy, habits of life, nature, course, and termination of previous diseases, if any, these anomalous conditions will be abridged, and in many instances make a plain and practical pathway.

Diseases of the uterus are, in our opinion, as well if not much better understood, as a rule, than lesions in any other organ in the body. In all organic diseases we are apt to expect and look for a common, definite and invariable train of phenomena. These expectations always have been and ever will be met with disappointment. The ever-varying phases of diseases of the uterus are, of all other organic lesions, the best calculated to attract the mind to organs entirely remote from the true seat of disease. Indeed, in no two instances have we ever found diseases of this organ indicated by the same train of symptoms. The nervous system succeeds perhaps more completely in perfecting the action of reflex sympathetic sensation than in any other organ; in many instances all its diseased phenomena, even pain and disease itself, are reflected to and established in remote organs; and, indeed, in many instances which have been brought before our notice, these secondary diseases resulting from the remarkable sympathy, involved more structure and ultimately assumed a vastly more serious character than the primary lesions. A case in practice will perhaps better elucidate this fact. From note book of practice in the year 1864, the following case is substantially taken:

In the month of April I was called to see a lady supposed to be dying of phthisis pulmonalis. Arriving at the house and upon entering the sick chamber I saw at a glance that the physical signs indicated the existence of this morbid condition in its most serious form. Interrogations elicited from the patient the following statement:

"Am 45 years old; have five living children; miscarried last conception, time three months; have never had any indications of disease until about one year ago; the first symptom at this time

was extreme fatigue after moderate exercise, which was succeeded in time by shortness of breath and dry hacking cough. This condition in three months' time developed into a cough very harassing. Expectoration free and copious. Have been taking medicine for the past six months, from five different physicians, some of merit, ability and practice. By the greater and more learned part was treated for chronic bronchitis. Have taken no medicine for the past three months except expectorants, being at times alternately better and worse."

A careful examination revealed the present following condition: Cough incessant, expectoration very profuse, of a thick whitish mucous consistency; respiration hurried. By auscultation, the mucus rale could be distinctly heard over both lungs, pulse 110, no fever, anorexia, great emaciation, pale and anæmic; dejected as to all future hopes; has had slight mucous discharge per vaginam for the last two years; no hereditary tendency; temperament well marked, nervous sanguine.

The peculiar manner of the inception of her disease, extreme exhaustion after moderate exercise, the abortion, and vaginal discharge, at once suggested the probable existence of diseased womb. These convictions were stated to patient and permission asked to use the speculum, which was readily granted, the use of which disclosed the existence of a very unsuspected malady on the part of the patient, and made very plain the true seat of the disease. The os uteri was dilated sufficient to admit the end of index and middle fingers, hypertrophied and of a pale bloodless appearance; a very large ulcer occupied well nigh the entire right half of the os and extended well up the canal, of a fungous character. It certainly afforded me much pleasure to inform this lady that her condition was not beyond the reach of remedies, and that the strongest hope was entertained of a complete restoration to perfect health, as there could be nothing more evident than that the lung trouble, anæmia and general emaciation were but the sequel to this primarily diseased uterus. In proof of the correctness of this conclusion, the treatment and result is herein submitted:

Internal treatment, one pill of quinine and Vallett's ferruginous mass, in proportions of one grain of the former and two of the latter, was ordered every six hours, also tinct. ferri. chlo., drs.

two; syrup zingiber, oz. one; syrup simplex, oz. two. Dose, teaspoonful every six hours; nourishment ad libitum. To the ulcer a topical application was first made of penciled nit. of silver, applying it well up the cervix, to be followed and continued twice a day with free injections of lukewarm water medicated with saccharum, saturnii, and opii pul., until next visit. Early in morning of following day was sent for in haste, patient supposed to be dying. Arriving at the house, patient was found in a truly alarming condition, all former described symptoms greatly intensified, breathing labored, pulse scarcely perceptible, cold clammy sweat all over the body; morphine was ordered sufficient to quiet nervous irritability; beef essence and brandy were to be given in addition to the above, every two hours. From this to the fourth day patient rallied, at which time acid nit. of mercury was topically applied to the ulcer, and followed as before with free ablutions. This application was repeated on the sixth, twelfth and eighteenth days, after which penciled silver nitrate was used for a period of six weeks, according to indications; followed by injections and internal treatment as given above. At the end of the seventh week patient was so far recovered as to justify the withholding the use of all medicines, and no other treatment was from this time forward used excepting the internal use of iron, and the free ablutions per vaginam, the water used being strongly medicated with ferric alum, which we regard as an indispensable remedy in the treatment of these diseases.

On the fourth month, dating time from my first visit, to the great surprise of all interested, patient was discharged free from cough, and in the enjoyment of her former perfect health, and has continued so to this present time. What are the important facts indicated in the history of this case? First, it proves most conclusively that there is a remarkable sympathy existing between the uterus and other organs in disease, and the still more remarkable and deceptive property of its nervous system in transmitting its diseased phenomena, and the efficiency with which its actions are endowed in establishing even disease itself of the most grave and serious character in organs entirely remote.

Another important fact elucidated in this case is the importance of examining diseased conditions, with a view of ascertaining facts rather than to carry out some finely-spun theory, and that when diseases of the womb are examined as they should and may be,

although seemingly of the most intricate character, they are in the majority of instances made plain, simple and practical, and of all other diseases the most kind in yielding to remedial appliances. Another fact is the non-reliability of certain symptoms which from time immemorial have been held as essential to the existence of this malady, not one of which existed in this case, not even so much as a well established leucorrhœa. The last, yet not by any means the least, other fact which we would call attention to in this case, is the utility of the speculum in the examination of this class of diseases, about which so much has been written by doctors of both Continental and European fame, some supporting it, others holding its use to be unchaste, indelicate and wholly unnecessary, inasmuch as they claim that examinations made by the toucher are equally reliable and much more agreeable to the delicate and sensitive female. A preference for the position of the patient, held as essential in this form of examination, the ofttimes rude and irritating manipulations actually necessary to make an expert in the use of the toucher in detecting the disease, and the application of remedies thereto, is a modesty pitiable and unenviable in the extreme, and in our opinion exists much more largely in the false imagination of the physician than with the patient.

If the latter assumption is true that it is equally reliable, then it is true that the treatment of ulcers, and in fact any disease of the external surface of the body would be better treated, and their pathological condition better or as well understood, by excluding the sense of sight altogether. But admitting that instances do occur in which the diagnosis and treatment of diseases of this organ may be effected by these means, are there not instances in which it is totally inadequate and unreliable? Take, for instance, the two following cases:

In the spring of 1861, I was called to see a lady aged 64, of Irish descent, and of the common national nervous temperament. Had given birth to nine healthy living children, had two premature deliveries, had never suffered from sickness until within the last month. The first indication of *her* disease, using the language of the patient, "was a fluttering sensation a little inferior and to the right of the umbilicus," being the right iliac. In short, there were no other indications of disease at this time excepting occasional nausea and vomiting. She sternly disclaimed ever having had any

previous disease of either bowels, kidneys, urinary organs, or uterus. Menstruation had ceased some ten years, had always been healthy, and in no instance followed with unhealthy discharges. Finding no well marked evidence of disease of any of the other viscera of the bowels, a diseased uterus was supposed to be the most likely cause of this anomalous condition, and consequently an examination was instituted per vaginam by the toucher, no better means being at hand, hoping to be at once relieved of all uncertainty in the diagnosis of her disease. This expectation soon met with sad disappointment, as the touch furnished no evidence of disease whatever, excepting induration of the anterior lip of the os, which condition I did not and do not regard as necessarily incompatible with, or uncommon in, perfect health. Relying implicitly at this time upon this method of examination, the impressions first made of the probable existence of uterine disease were at once dismissed, and for the present decided to treat present indications. A laxative enema was prescribed, to be followed by an anodyne enema. This, however, and in fact all other remedies used, furnished but temporary relief. Three weeks later, patient no better; nausea and vomiting, which at first demanded little attention, have now assumed grave and unmanageable proportions, rapidly ejecting both nourishment and remedies. This, together with the general prostration and emaciation, presented the most alarming phase of the disease. The only means from which relief could now be obtained was blistering, and the hypodermic use of morphine, and even these were far short of accomplishing what was desired. My esteemed and worthy friend, Dr. Winston Somers, was called in consultation. A very thorough and careful examination was made according to DaCosta's method of exclusion; finally a very indefinite conclusion was reached in favor of cancer of the pyloric orifice of the stomach. On the following morning a suspicion once more arose respecting the uterus, and of the possible inefficiency of the former method of examination, and to set this question forever at rest the speculum was used; before using it, however, an examination was again made by taxis, and resulted without having the least apprehension aroused of disease in that region. A bivalve speculum was then introduced, and to my great surprise, I was apprised of the existence of ulceration of the cervix uteri. The outer surface of the os was, as

indicated by the touch, smooth, regular and of a healthy appearance; well up the cervix, entirely beyond the reach of the finger, a small granular white spot was observed, about the size of a pea. This was afterward, upon dilatation of the os externum, found to be but the inferior border of a large ulcer extending up the canal. The despondency of both patient and physician were at once changed into a lively hope, and patient was at once assured that fears need no longer be entertained of her future health and speedy recovery. The treatment in this case from this time consisted mainly in topical applications to the ulcerated surface; nitrate of silver, acid nitrate of mercury, were the most important, followed in time with free ablutions, consisting of the ferric alum solution, a pill consisting of extract of belladonna, and opii pul.; each grs. one was wrapped in cotton wool and introduced into the vagina, and was followed with a very happy result in quieting the stomach. After the first depressing effects of the topical application had passed off, all symptoms began to assume a more favorable aspect, and in due time patient was discharged convalescent.

The next important case in this connection was that of a lady, æt. 38, bilious temperament; has been troubled with pain for some time in lumbar region, with slight leucorrhœal discharges in last six months; is now having excessive hemorrhage from vagina. Having delivered this same lady, some four weeks prior to this time, of a three-months' conception, and as the placenta, liquor amnii and fœtus all came away intact, there was no reason to suppose the hemorrhage the result of the common cause, retained placenta. A thorough digital exploration of the vagina was also made in this case, anticipating that by this means I would readily trace the hemorrhage to an adventitious growth in or about the neck of the uterus, but in this, likewise, I was disappointed. The os, so far as could be reached by the finger, was smooth and regular, but dilated so that I could readily detect the blood flowing, as I then thought, from within the uterus. The most rational course indicated at this time seemed to be to treat the case upon general principles, and trust to time for the further development of facts. Without following this case further, let me say, in short, that every means and appliance from which I could anticipate the least profit were used: astringents, arterial opiates, and sedatives, and finally the tampon, being first well soaked in a strong solution of

sacch. saturni and opium, all of which were but temporary in controlling the hemorrhage. The non-coagulability of the blood which appeared at an early period, rendered the tampon almost entirely ineffective, and in spite of all efforts to the contrary the bleeding continued, at times greater, at others less, until patient became almost as pale and pulseless as death. The bleeding had become of a thin sanious character, and death by syncope was strongly indicated. Being confident at that time that through the touch I could detect any lesion within its reach from which the hemorrhage would likely proceed, and relying implicitly upon the evidence furnished thereby, together with the assurance from all authority at hand of the extreme infrequency of uterine hemorrhage, only as a result of causes entirely remote from those I could have the least anticipation of disclosing through the speculum, I had treated the case thus far without its use. But as the condition had now become desperate, and having exhausted every other available means, as a dernier resort the speculum was now used, with a vain hope of its disclosing some fact that would aid in the diagnosis and treatment of the case. A bivalve one was selected, and used with the following result:

The first observation seemed to simply confirm the deductions made from the previous digital examination. The os was smooth and to all outward appearances healthy, excepting the dilatation which I supposed to be the result of the excessive bleeding. Those impressions, however, were scarcely made when my mind was attracted to the extreme elongation of the cervix. This fact was contemplated with some hope that perhaps the superior part of the canal had not been reached by the finger; in this anticipation I was fully confirmed. The closed blades of a long pair of forceps were then passed into the cervical canal at least two inches without the least resistance. By separating the handles of this instrument the lips were separated, exposing to full view the whole course of the canal, and also to my great comfort the true, unmistakable source of the bleeding, being far up the left side of the cervix, and from the vessels involved in an ulcer. Of all men living, it belongs to the physician, alone, to appreciate the degree of responsibility, the mental and physical anxiety and toil experienced in the treatment of a case like this, and the relief furnished in this examination; and surely it belonged to the lights of the

speculum alone to set at defiance all future controversy respecting the cause and source of this bleeding, as through it was brought into view almost the very arteries and veins, out from which was fast flowing the life of this patient. A pledget of lint was at once made, around which was tied a silken cord of length sufficient to extend without the vulva; after being well soaked in a solution of persulphate of iron, this pledget was first firmly pressed against the bleeding surface within the canal. In the course of half an hour the bleeding for the first time was fully arrested. In forty-eight hours this pledget was removed by traction at the cord, and a new one inserted. After its removal the nitrate of silver was topically applied to the ulcer, sulphate of copper and the ferric alum solutions were used as indicated. From and after the time the first pledget of lint was used, there was no further difficulty experienced in controlling the hemorrhage, the ulcer yielded kindly to above treatment, and in due time this patient was also discharged in the enjoyment of perfect health.

That a perfect knowledge of the true pathological condition and the successful treatment was in these two instances dependent upon the use of the speculum, certainly no one will pretend to deny; and doubtless its use with equal certainty and importance has been indicated in many instances in the practice of almost every physician. Why not then let the speculum at once and forever be regarded as a fixed scientific means of examination of all diseases belonging to this class, and place it in the list where it belongs, among the most important and reliable instruments, and, when used with prudence, as little objectionable as any known to the profession? And when considered in the light of its "anatomical and physiological predisposition to disease, with the liability, to which its position in the body exposes it, to frequent physical contusions," together with the unlimited abuse which the false and in many instances criminal pride and practices of this modern age have subjected it, it cannot be regarded as a far-fetched or unreasonable conclusion, that inflammation and ulceration of the cervix uteri is of so very frequent occurrence. Indeed these deductions are but the reutterance of facts which are corroborated in the teachings and practice of wise physicians of all ages. And does it not seem reasonable, at least, in this nineteenth century, an age in which medicine in all its parts is supposed to be reduced

to a perfect science, that these plain facts, supported as they are by the experience and observation of the most worthy physicians from the earliest history of medicine, should now be established and entitled to full credulity?

But, on the contrary, the tidal wave in medicine moves on, and these simple, plain truths are still the theme of ardent and zealous controversy, some supporting, others utterly denying the existence of ulceration at all, and still others who regard it as the parentage of almost all diseases to which the female constitution is liable.

This demoralized status of this as well as all other branches of our profession, will ever continue, just so long as every child in medicine assumes the high prerogative of a medical teacher, and their teachings, with every false conception which flits across the medical mind, are permitted to flood the country as high medical authority. Let the proper authorities close up to these premature and chameleon-colored teachers the various avenues through which they reach the public and medical mind. Deprive them of this garb of credulity. Let the inventions of pessaries and silver-mounted uterine supporters, and in fact all the vast array of cunning inventive genius, be subjected to the test of good common practical sense, rather than the beautifully worded recommendations, upon which much greater reliance is placed than upon the intrinsic merits of the inventions themselves.

Swifter than with the wings of the morning have we been gliding down the stream of medical science, constantly accumulating and gathering upon every hand new theories and remedies until the present, and we now wake up not to find a well-regulated and accredited science, but to find well nigh the whole system of medicine submerged beneath a flood of theories both true and false. Facts which ought to stand out in bold simplicity are prostrated in utter confusion and turmoil. And is it not a grave and deeply humiliating fact, that notwithstanding all our past experience and boasted acquisition of knowledge, even this branch is still regarded as a mere conjectural art? Are there not truly the greatest responsibilities resting upon the physician of the present age? And we need not pause a great while in amazement or wonder, contemplating these facts; they are not by any means inexplicable. The normal condition of all well organized bodies

is equally dependent upon actions diametrically opposite: growth and development, disintegration and separation. Let the depurating organs of the human system be closed up for the shortest conceivable time, and notwithstanding the greatest amount of pure healthy nutriment is forced into it, yet the inevitable result is disorder and death, and no one for one moment would regard the result as strange or inconsistent.

And none the less dependent is the healthy condition of science upon these same essential vital actions. We had better pause awhile at this advanced age, and perhaps a careful study of these truths may disclose the very important fact, that these vital and reciprocal actions have been greatly neglected, thereby permitting all the rubbish, effete and worn-out material of the great past to accumulate in immeasurable proportions around the very heart of this as well as every other branch of medicine.

ARTICLE II.—*Epidemic Cerebro-Spinal Meningitis.* Extracts from an Essay read before the Medical Association of Northeastern Ohio, by S. HUDSON, M.D., of Medina, Ohio.

* * * * The disease generally prevails in the winter or colder months of the year, showing that it is not caused by malaria; indeed, I have never known it to prevail in miasmatic or malarious districts, as an epidemic. Whether it is contagious or not is not definitely settled, much difference of opinion existing upon this point.

As to its pathology, I believe it is admitted by all to be an inflammation of the meninges of the brain and spinal cord; and this inflammation varies from the highest, or sthenic, to the lowest, or asthenic, type; both of these conditions obtaining sometimes—at different periods of the disease—in the same person. Such was the character of most of the cases in the epidemic that occurred in Medina, Ohio, during the winter of 1863–4, the mortality of which was about 80 per cent.

I come now to the most interesting question connected with the consideration of this disease, *i. e.:* What is it—what is its true nature? I answer, that after close observation and treatment of

many cases, I have had the conclusion forced upon my mind that *epidemic cerebro-spinal meningitis* and *epidemic erysipelas* are one and the same disease. In other words, that cerebro-spinal meningitis is nothing more than an erysipelatous inflammation of the meninges of the brain and spinal cord. My reasons for this opinion will appear before I close, and it is for you to judge if they be valid.

The symptoms of the disease vary much in different cases. Sometimes the attack is so sudden that the patient is found insensible, and so continues until death; but as a general thing several days' indisposition, accompanied by cephalalgia, precede the full development of the malady, which is ushered in by a chill of more or less intensity and duration. I have known these chills to vary from slight chilliness to an attack so severe that the patient succumbed without reaction ever taking place. Reaction, however, usually occurs; febrile symptoms manifest themselves, and you shortly after discover that your patient has hemiplegia; or is blind; or perhaps deaf; speechless, with contracted pupils; opisthotonos, or convulsions, may follow in rapid succession, and of the most alarming character; tongue covered with a moist, white coating; bowels usually constipated; incessant vomiting. Retention of urine is very frequent, as is also dysphagia. In other cases the patient complains only of headache; is inclined to sleep most of the time, the drowsiness finally passing into coma with stertorous breathing, in which condition he dies. In the cases which came under my notice, the most of them had, at the onset, a peculiar lazy, sluggish character of pulse, more easily recognized than described. In many of the cases I was enabled to make my diagnosis at once from the peculiar condition of the pulse. In the most malignant cases the patients would not survive the attack more than thirty-six to forty-eight hours, though some would linger four or five days; when they lived longer than this they would sometimes last as many weeks. Two of apparently the most severe cases we had lingered between death and life for some six months, and both finally recovered.

I would now invite your attention to a brief description of an epidemic that visited our place in the winter of 1863–4. Early in the winter an epidemic of erysipelas made its appearance. Many died, for it was phlegmonous erysipelas prevailing as a malignant

epidemic. In some cases the patient would be taken with a pain in the end of a finger or toe, and die within forty-eight hours without any external appearance of the erysipelas. In others the disease would affect the bowels, brain, or spinal cord, and the patient would die in a few hours. During the prevalence of this epidemic I was shocked to learn that one of our county officials was thought to be dying, and of a new disease. Through the kindness of friends I was invited to see him. His physician had diagnosticated congestive chill. I found him *in articulo mortis*. From his appearance and the history of the case, my diagnosis was cerebro-spinal meningitis. His body was slightly covered with petechiæ, facial muscles contracted, head thrown back, and pupils dilated. Duration of the disease, forty-eight hours. Following this case came others, thick and fast, of as great or lesser intensity, but of the same general character. I will relate the prominent points of a few of them.

Case I. Mrs. B. Taken with a chill Feb. 4, 1864, which lasted twelve hours. As soon as she reacted from the chill her respirations went up to fifty per minute, while the pulse was heavy and sluggish at forty to the minute. She soon became insensible and went into a deep, heavy sleep, from which she could with difficulty be aroused. This state continued until about noon the next day, being the fifth from the attack, when she partially aroused and would answer questions, though not always correctly. Now her pulse became more rapid, her breathing less so; her stomach would tolerate nothing, and the characteristic pea-green vomit occurred. These symptoms continued during the day, with bowels constipated, retention of urine, some opisthotonos, pupils contracted, and partial hemiplegia of the left side, her body slightly covered with petechiæ. Consequently I diagnosed spotted fever, or cerebro-spinal meningitis, and so informed her friends. There was no abatement of the severity of the symptoms until the morning of the seventh day, when I found her apparently much better. The nurse pulled down the bed clothing, and said, "Here, doctor, is your spotted fever, or cerebro-what-do-you-call-it!" And sure enough, what did I call it? A more well defined and plainly marked case of phlegmonous erysipelas I never saw. The lady in attendance said: "Doctor, I thought *you* had seen enough of erysipelas to know it from spotted fever." The neck

of the patient, both back and front, as well as the anterior portion of her chest, was completely covered with an erysipelatous blush, which was persistent for seven days, when it was followed by desquamation of the cuticle, but by no cellular pus formation, of which I had grave apprehensions. After a lingering illness the patient recovered. I had here primarily as well marked a case of cerebro-spinal meningitis as I ever saw (and I have treated a great many cases of it); her symptoms were almost identical with those of others who were at the same time suffering from the disease and dying almost daily.

Case II. The next case was that of Miss R., æt. 21, living but a few steps distant from the house of case I. She too had rigors, which lasted in her case some fifteen hours.

Reaction came on slowly, followed by vomiting, as in the other case; pulse slow and heavy; respiration very rapid; stomach would retain nothing. Hemiplegia of left side on the second day; she was deaf, blind, and speechless; pupils contracted; bowels constipated, and the urine retained. Diagnosis: spotted fever. (This was before my other case "went back on me," as they were attacked at nearly the same time.) As no external erysipelas appeared in this case, my diagnosis stood approved. After many weeks this case also recovered.

Cases III and IV. In the family of Miss R—— two younger brothers were taken down within a few hours of their sister's attack, both of whom had phlegmonous erysipelas of scalp and face, and recovered in three or four weeks. * * * * *

I might multiply cases, but suffice it to say that parallel ones to those cited were numerous, not only in our own village, but all through the adjoining townships. It was no uncommon occurrence for one member of a family to have cerebro-spinal meningitis and in less than twenty-four hours another would be taken down with erysipelas. In other cases the disease would commence as cerebro-spinal meningitis and terminate as erysipelas, (as in the case of Mrs. B——); in still another class a case of erysipelas of face and scalp would be progressing favorably, when suddenly the eruption would fade, and the patient would die with all the symptoms of spotted fever. In others yet, the attack would be upon the extremities, and so severe would be the pain that it was almost impossible to mitigate it; this would continue from twenty-four to

forty-eight hours, when metastasis to the brain or spinal cord would occur, and the patient succumb within a few hours.

Those of my medical brethren who have passed through one or more of those terrible epidemics of erysipelas, which have visited Northern Ohio at several times and in numerous places since 1842, will doubtless call to mind many such cases as I have described.

These cases are of importance, as I believe it is admitted by all writers on epidemic erysipelas, that there are scarcely any tissues of the body exempt from its invasion; that the meninges of the brain and spinal cord, the thoracic and abdominal viscera, skin, muscles, nerves and bones, may any or all of them be the seat of this disease.

Another point favoring the idea of the identity of cerebro-spinal meningitis and epidemic erysipelas, is their frequent simultaneous appearance and identical symptoms of invasion. In 1864, after being deceived a number of times, I was more cautious in my diagnois, for I could not tell, at the onset of the disease, whether it would show itself externally or not. As spring came on, the disease relaxed in severity, but up to the last cases preserved its erratic course as to external manifestations.

From 1864 to 1871 we were free from a visitation from this scourge, but Dec. 9, 1870, it reappeared, selecting as its first victim a little son of my own, aged eight years. He had pain in his ankle, of unusual severity, following a slight chill. I suspected rheumatism, and so treated him for a short time, but on testing his urine and finding no excess of uric acid, and the excruciating pain continuing despite my opiates, I called in my friend Dr. Hard, but we were unable to make a satisfactory diagnosis. The 4th, 5th and 6th days the pain increased in severity until the poor child begged us to kill him and end his suffering. The leg now for the first time was slightly swollen, and the least jar would almost throw him into convulsions; bowels constipated, and urine scanty; pulse nearly normal. On the morning of the 7th day I saw to my sorrow that the meninges of the brain and cord were affected; then followed in rapid succession the symptoms usually attending meningitis, and in about twenty-four hours he expired.

The next case in this epidemic was that of Mrs. W——, æt. 35, living but a few doors from my house, and attacked shortly after my boy. Pain in the ankle, identical in character and sever-

ity with that of my son, until the third day, when her foot and leg took on an erysipelatous inflammation which lasted eight or ten days, when she slowly recovered. This was a well defined case of phlegmonous erysipelas, but had the disease invaded the cerebro-spinal meninges, as it did in the preceding case, instead of coming out on the leg, it would have been recorded as one of spotted fever.

I have not time to make special report of all the interesting cases that fell under my observation last winter, (1871); they were numerous, and of the same general character as those of the epidemic of 1864, and Dr. Hard and myself had the misfortune to treat nearly all of them.

Our cases of pneumonia, several of them after becoming convalescent, suddenly went off with brain trouble, with all the symptoms of spotted fever. This was the case in both epidemics spoken of; and our measles patients fared but little better. Indeed there seemed to be a tendency to brain trouble in every form of disease with which we had to contend. * * * *

ARTICLE III.—*Shortening and Bending in Fractures of the Femur.*
By J. E. NICHOLS, M.D., of Osage, Iowa.

Dr. M. A. McClelland makes a quotation in his article on "*Civil Malpractice*," appearing in the April No. of the JOURNAL, which is deeply interesting to me. It is the strictures of Dr. Hamilton upon those surgeons who claim to have cured fractures of the femur without shortening. That so many eminent names should be ranged upon opposite sides of apparently so simple a question, is startling at first thought, yet a little reflection induces us to conclude that both parties are right and truthful. If a fractured arm may be so carefully cared for, and securely dressed, as to obtain a perfect limb, with no perceptible shortening or bending, it seems as though a leg might occasionally afford equally as happy a result. It is true that the latter is possessed of a larger amount of muscular tissue; but this is hardly sufficient to make all the difference, and does not.

From the limited observations I have been permitted to make,

both in army and private practice, I am convinced that the necessity for lying in bed during the treatment of a fractured femur, and the temptation to use the limb too soon afterwards, are the chief causes of all the deformities. I have not had the facilities for observing variety in these cases that have been enjoyed by many surgeons; but I have had one experience that falls to the lot of few, and is desired by none. It was a fractured thigh occurring to myself.

This case, with an account of a fracture-couch that I invented at the time, was reported in the CHICAGO MEDICAL JOURNAL for December, 1860, if I rightly remember. My preceptor, Dr. O. D. Howell, had taken every pains to secure a perfect limb. I was a student of medicine at the time, and he placed before me every volume in his library that treated of fractures for my study, urged me to lie perfectly still, and insisted that my parents and attendants should keep me wholly immovable while attending to my wants. Besides this, he came to see me once a day to look after extension and counter-extension himself. The result of this zealous care was apparent on removing the splints at the end of seven weeks. No shortening could be found by the most careful measurement. In measuring to the malleolus the whole limb was found to be longer than the other by a fourth of an inch, caused, I have no doubt, by the extension force drawing apart the bones at the knee joint. A starch bandage being applied, I soon began to walk with crutches, finally using only a cane, and as soon as possible I threw that to one side.

It was about eighteen months afterwards, that I reported the case in the JOURNAL, and shortly thereafter Prof. Brainard called me into his office one day as I was passing, and made a thorough examination of the injured thigh. On measuring it, he found, to my great discomfiture, a full half-inch of shortening, and a slight bending backwards of the point of fracture. Several persons of proved mechanical skill had been present at the time the dressing was removed by Dr. Howell, and all of them, after the closest scrutiny, pronounced it a perfect limb. More attention was paid to the matter than would otherwise have been, on account of one of our surgeons recently having had a suit for malpractice to defend.

Up to the time Dr. Brainard made the examination I had not

the least thought that one of my limbs was shorter than the other. From that time until A. D. 1865, it continued to shorten still more; for when Prof. Freer examined my physical status, at this latter date, he not only discovered a lateral curvature of the spine but a shortening of the thigh to the extent of *three-fourths of an inch.* From that date to the present time no further shortening has occurred, as I have just had verified by actual measurement.

Now, with regard to those surgeons who report cures of fractures of the femur without shortening, were not their measurements and records made at the close of their most careful course of treatment, when all they reported was true and correct? While there has been some shortening in nearly all the cases coming under my observation *during treatment*, there has been infinitely more shortening and especially bending after all dressings were removed in the few cases I have been able to keep a watch upon; and I presume the same is true of the others.

To keep a patient off his leg until it becomes so firm that it will not shorten further, would be a confinement that few or none would consent to. During the treatment there is only the force which is exerted by the muscles to overcome, and this, when they are in a state of repose (unexcited) is not so great as many would suppose. The muscles at the instant of applying extension, obstinately resist a great force; but keep up the extension, and as they gradually yield themselves to relaxation, the power of extension is found to be much too great for all that is required of it. After treatment is discontinued, when the limb is first employed, there is not only the muscular force to overcome, but the weight of the body to sustain besides.

A person with a fractured arm will carry it about suspended in complete repose long after he might use it with comparative safety; and when he does use it, the exertion of force is in a direction to prevent, more than to produce, shortening, while the weight of the arm below the fracture offers its gravity to antagonize the muscular force. An arm is more liable to become crooked by premature use after fracture than shortened. But it is an easy matter for most patients to deny themselves the use of an arm until it may be safely employed, while a leg is tested and put into use just as soon as it will bear it without visibly yielding. Why, if a man sprains his wrist he will carry it around for days or even weeks;

but if the ankle is so unfortunate as to become sprained, it will be put to the task of limping down town the very next day and perhaps is walked home on immediately after the injury.

There is no comparison between the two extremities. The attendant conditions of the arm and leg, from the moment of fracture until complete ossification of the provisional callus occurs, are entirely and widely different. The broken arm is taken up tenderly, and cleverly carried by the patient himself, often to the surgeon's office; and from that time until it is cured he acquires a habit of protecting it from the smallest shock even in his sleep; while a broken leg makes of a man a helpless, dead weight, to be moved about and cared for by others. There is a vast difference in the muscular antagonism of a fractured limb when handled by the patient himself and when manipulated by others.

Surgeons cannot be too particular about a bed for their patient with a fractured femur. Such a patient is supposed to have no knowledge of all he must experience and endure in being confined to his bed, and of the necessity of his being patient and immovable, however much his sturdy back and hardy muscles may ache from inaction. But the surgeon is presumed to understand and fully appreciate this; and ought not only to indifferently desire a properly constructed bed, but should insist that one be obtained or improvised for the occasion. He ought not only to advise, but should repeat and reiterate it, that his patient must lie still. When he removes the dressings he should inform his patient that it all depends upon himself as to whether he shall have as good a limb six months hence as now, or a shorter and more crooked one. All these things should be forcibly impressed upon the mind of the patient. The duller the mind the greater need of careful explanations, and of thoroughly "beating in" the instructions. I have often thought that some appliance to aid in walking, on first making use of a fractured femur, as in hip-joint disease, would save many limbs from serious deformity.

ARTICLE IV.—*A Case of Congenital Variola in a Fœtus of five Months, the Mother revaccinated, not having had Varioloid.* By PHILIP ADOLPHUS, M.D., Chicago.

Dr. Gilmore requested me to see a woman residing in Polk Street, who had spontaneously aborted a dead fœtus of five months, which, he said, was covered with small-pox pustules. This case came under my supervision as Sanitary Inspector.

Its peculiarity will at once be appreciated when the woman's history is told. Her husband had had a mild attack of varioloid some weeks previously. Dr. Gilmore revaccinated the woman above mentioned, as well as the other members of the family.

The woman remained well for ten or fifteen days, when, without having had the slightest trace of varioloid, she aborted, and a dead fœtus of five months made its appearance, covered with pustules.

I examined the woman and the fœtus.

The woman had not the slightest trace of an eruption.

The fœtus presented the following appearances: The disease was of the discrete variety; perhaps there were about a hundred pustules over the body. Having been kept from the open air, and bathed in the amniotic fluid, the pustules were whitish and flattened, and resembled the pustules met with on the mucous membrane of the mouth; many had the slight pseudo-membranous disk which covered the pustules, removed, on exposed ulcerated surfaces.

This is a case in which the fœtus only had variola before birth, though the mother had not been afflicted with it.

"Some years ago, a woman in the wards of Professor Tonquier was delivered of a dead child, affected with small-pox, although she had herself been vaccinated."

"The illustrious Mauricean relates that his mother, when in the last stage of her pregnancy, had the misfortune to lose the eldest of her three sons by small-pox, to whom, notwithstanding her condition, she was unceasing in her attentions, and that at his birth, which occurred the day after the death of his eldest brother, he presented four or five pustules of small-pox." (Cazeaux, fol. 566.)

"Ebel, Kesler, Watron, Jenner, Denent, Royer, Bouchut, and Chaigneau, have all seen children born with variola, the mothers being free of the disease. In several of these cases the mothers having been vaccinated were insusceptible to the epidemic influence, yet were able to communicate the virus to the fœtus." (Ibid, fol. 447.)

130 Walnut St.

Selections.

On the Disinfection of Air. By A. Ernest Sansom, M.D., Lond., M.R.C.P., Physician to the Royal Hospital for Diseases of the Chest, and to the Northeastern Hospital for Children.

Few physicians will be inclined to deny that the material poisons of many of the spreading diseases are capable of being wafted by the air from place to place and from person to person, and that in this manner the maladies of infection are in many instances transmitted. In certain diseases—among which may be especially enumerated variola, scarlatina, rubeola, pertussis, pyæmia, erysipelas, and diphtheria—the subjects are centres whence the evolution of disease-inducing particles takes place. It is obvious that complete isolation of an individual, and removal of all the chance of his directly infecting others, are practically impossible; and, even if such were possible, the disease-poison would yet be cast off to attach itself to any surrounding material, still capable of inducing its effects in the future. It would be a measure of the highest importance if the disease-poison, while existing in, or wafted by, the air, could be rendered inert. This is what I mean by disinfection of the air—the rendering inert of the disease-poison which in some infectious disorders is contained in, and transmitted by, the atmosphere.

Many practitioners have attached an importance to the attempt to disinfect the air poisoned by the emanations of those sick of an infectious disease, as a positive duty; and have adopted various methods of carrying it out. Others, however, urge that all attempts in this direction are futile—that it is impossible to disinfect the air.

Let me discuss briefly what is the nature of the material, which I have for convenience called *poison*, that we desire to render inert. It is ponderable, and obeys physical laws. It often remains active for long periods of time, and hence is unaffected by the frequent

mutations of the atmosphere; but is so minute as to be entirely undemonstrable by any ordinary direct physical means, and undetectable by the highest powers of the microscope. The diffusion experiments of Chauveau and Sanderson have given convincing proof that in vaccinia, variola, and sheep-pox, the poison is a *solid*, insoluble and indiffusible. This conceded, the area of speculation becomes narrowed; for it is impossible to imagine the material an agent merely organic and gifted only with the properties of inanimate matter. If it be an organic solid, neither soluble nor diffusible, how does it interpenetrate the tissues of the body it so profoundly affects? and how can we explain its immeasurable powers of reproduction? It is not my purpose to trace the analogies of the disease-poison, nor follow the evidence which points to the probability that it is to be endowed with the properties of *living* matter. We must admit one of two views—that it is vitalized, or else it acts by an inexplicable process of catalysis; and if the analogy of other so-called catalytic processes be invoked for the elucidation, we shall find that, as science progresses, these become less and less explicable, on the hypothesis of causation by dead organic material in any state whatever. In fact, I believe it to be true, in the present state of science, that no kind of catalytic change of organic bodies ever takes place without the intervention of living things or their active secretions. I will now turn to the consideration of the methods which have been hitherto adopted for the disinfection of air, and the *rationale* of their action.

First come what are called OXIDIZING DISINFECTANTS.

1. Foremost among these are the alkaline permanganates, which, when dissolved in water, it is recommended to expose in open vessels to the air of a sick-room, or to diffuse in the form of spray throughout the atmosphere. The theory is, that these yield up oxygen to the disease-poison, and, altering its chemical constitution, impair its morbific properties. Now it must be remembered, in the first place, that these agents are entirely non-volatile. There can be, therefore, no commingling with the air. The particular portions of air which happen to come into immediate contact with the surface of the solution, no doubt have their contained organic particles oxidized; but how feeble a proportion do these bear to the atmosphere of an apartment! The nauseous products of putrefaction, the permanganates have a remarkable power of oxidizing, and thus rendering inodorous; they are excellent *deodorants;* but I have shown them to occupy a very low place both as arresting putrefaction and as killing the low forms of life. A little consideration must show that agents which operate by oxidation only can have but little effect upon the specific poisons of disease. Imagine the minute particles of disease-poison as it is after a long continued relaxation with large volumes of air, this air frequently containing its special oxidizing constituent—

ozone; or imagine it commingled with vast bulks of water; surely here are enough conditions for its speedy oxidation and destruction, if it be capable thereof. How insignificant must be the superadded effect of the oxidizing permanganate! In whatever bulk employed, the permanganates do not destroy the microzymes inducing putrefaction, existing in the air superincumbent upon them. From my view, therefore, of the nature of disease-poison, I am justified in concluding that the employment of permanganates as means for the disinfection of air is at once frivolous and futile.

2. Chlorine is also an oxidizing disinfectant; but this stands on higher ground as an air-purifier, because its volatility allows it to come in immediate contact with the particles suspended in the air. It is of a very high value as a deodorant; but its action on fermentation, putrefaction, and on the life of a low organism, is but feeble. I have seen fungi living luxuriantly in and amongst the particles of chloride of lime.

3. Iodine is much more efficacious. It is an oxidizing agent, and hence a deodorant; but it is more—it destroys microzymes, and arrests decomposition. It is of very easy application. If placed in open vessels about a room, it evaporates spontaneously, and is a very useful agent for disinfection of air.

4. Sulphurous acid has also a double action; it is a deodorizer, and hence a deodorant; and it is extremely powerful in destroying the life of low organisms. It has been used (the method of its evolution being merely burning brimstone from a metal plate), and, as the records seem to show, with much advantage.

5. Carbolic acid is a volatile agent, easily diffused throughout the air. It exerts no chemical action thereupon, and thus is not a deodorant; but in my opinion it holds the highest place as a disinfectant proper, for it kills the low forms of life existing in the atmosphere, even when it is present in but small proportion.

Starting with the view that the poisons of spreading diseases are minute particles of living matter, I will now turn to some experimental evidence bearing upon the question of the efficacy, positive and relative, of air-disinfectants. Observation of the effects of different agents, when commingled with the air, upon the low organisms met with in putrefactions, must for the most part offer *a fortiori* evidence; for in many infective liquids the presence of the minutest bacteria cannot be detected. Dr. Sanderson has, however, observed bacteria as the characteristic inhabitants of the infective fluids which transmit pyæmia, "and therefore probably the carriers of infection." Without assuming, however, anything further than that the poisons are *living*, we can, I think, obtain valuable analogical evidence; for the influences which kill bacteria, monads, and germs of fungi, could surely with great probability kill also the minuter particles of living matter constituting the infecting poison.

Experiment I, *showing that Bacteria and Monads are killed by Air which contains Carbolic Acid.*—A maceration of hard-boiled egg in cold water was observed on the third day after preparation. Multitudes of cylindrical and filiform bacteria and ovoid monads were observed in active movement (magnifying power, 500 and 750 diameters linear). A small drop was placed on a slide, and held for thirty seconds over the open mouth of a flask which contained a little carbolic acid. This was compared with another drop uninfluenced. At first, movements in each case were equally active. In about two minutes in the former, movements became more languid, and soon ceased in many instances. Some, however, continued perfectly active. Experiment was repeated with exposure to carbolic acid for one minute. Monads, at first active, began to move in smaller circles, then merely to revolve on their axes, and finally manifested merely a peculiar vibration. A very marked difference was shown between the exposed and the test-drops; in the former, a large number of bacteria were perfectly motionless. Experiment repeated with exposure for three and five minutes respectively: in the latter case, nearly all were dead. It was evident that the superficial portion was so affected as to render motionless all the bacteria; but in the deeper layer some, though comparatively a very small number, manifested active movement.

Observation has shown me that, whilst the effect of carbolized air upon a fluid capable of putrefaction is to prevent the formation of the usually dense follicle formed by dead bacteria, and to kill those which are superficial, it has no influence upon those below the surface level, which continue to manifest active movement.

Experiment II, *showing that the Germs in the Air, which develop into Fungi, are killed by Air which contains Carbolic Acid.*—Two precisely similar glass flasks were taken, and into each was poured some well boiled paste made from wheat flour. Each was provided with a cork perforated and fitted with tubes for the entrance and exit of air. Over the surface of the paste in A, 500 cubic feet of air were blown by means of a bellows, and then the flask was closed with India rubber tissue. B was treated precisely similar, except that the air first traversed the surface of six drachms of liquefied carbolic acid contained in another small flask. B was subsequently sealed. The loss of the liquid carbolic acid was half a fluid drachm. The flasks were then kept in identical conditions. In flask A, after a few days, little islands of mildew appeared; the paste fermented, and disengaged gas-bubbles; and now (thirteenth day) green mould covers the sides, and large masses of white and green mould are on the surface of the paste. In B the paste remains perfectly unchanged, and now (thirteenth day) presents not a trace of fungoid manifestation. These flasks

were exhibited to the meeting, and it was manifest that, although more than three weeks had elapsed since their preparation, the paste over which carbolized air had been passed, remained without any sign of decomposition; the other presented a mass of mildew.

I have formerly shown that the appearance of penicillium and aspergillus can be entirely prevented by the presence of carbolic acid in the air supplied to the soil.

Experiment III, *showing that, whilst the presence of Carbolic Acid or Sulphurous Acid in the Air prevents Putrefaction and the concurrent Development of Living Forms, the so-called Oxidizing Disinfectants fail to prevent either.*—Four small wide-mouthed glass bottles, of similar shape and size, were filled with small cubes cut from a hard-boiled egg. They were then placed each in a small trough, into which was poured the following disinfectant agent in each case: A, commercial permanganate solution (red,) 1½ drachm; B, commercial chloride of aluminium, 1½ drachm; C, pharmacopœial sulphurous acid, 1 drachm; D, crude carbolic acid, 11 drops. Each was enclosed under a glass cover, so as to allow free communication of air both with the open bottle and the free surface of the disinfectant agent; but the cover itself was imbedded in cement, so as to exclude external air. At the end of seven days, the covers were removed, and the bottles containing the pieces of egg were each filled up with distilled water which had been well boiled and then allowed to cool. The covers were then reapplied, and the contents were examined three days afterwards. A (permanganate) was extremely fœtid, so turbid as to be absolutely opaque, and with a thick pellicle covering its surface. It teemed with small bacteria, and presented many fungoid cells; and the portions of egg were disintegrated; they were in a state of advanced decomposition. B (chloride of aluminium): very fœtid and turbid, rather less so than A. Every drop examined swarmed with small monads and bacteria. The egg-cubes were broken up, and presented signs of advanced decomposition. C (sulphurous acid): Fluid presented no fœtor; was perfectly transparent. The cubes of egg appeared to preserve their shape and condition exactly as when first introduced. On microscopic examination, many fields presented no trace of motile organism; but occasionally a few active bacteria were met with. D (carbolic acid): Fluid appeared almost clear, and the egg-cubes distinct. Very few bacteria presented themselves, usually five or six in a field; they were of unusual length. Decomposition was almost, but not entirely arrested.

The evidence which I have adduced, I think, fully shows that the presence of certain volatile or gaseous antiseptic agents in the air is sufficient to poison the lowest forms of organisms, to pre-

vent the appearance and development of fungi, and to arrest the putrefaction of organic material. I hope it will be allowed that we who counsel the employment of gaseous or volatile antiseptics for the disinfection of air, do so with the clear understanding of a purpose to fulfill, and a train of analogical evidence that the means are adequate to the end. We believe the subtile poisons of disease to be minute particles of living matter; and that these, given off from a diseased person, can be contained in and wafted by the air. We do not contend that they are equally numerous with the harmless germs of living things which the air normally contains; but they are with them and among them. We show that the presence of antiseptic agents in the air destroys the harmless germs; and we contend that it is probable that it also destroys the disease-germs, which have strong analogical relations with the former, which certainly do not exceed them in bulk, and are probably far more minute than those which are obviously destroyed. As regards the nature of an efficient air-disinfectant, we find that it must be volatile or gaseous, and therefore capable of equable diffusion throughout the air. The non-volatile agents are inert. It is not the action of a chemical agent upon an organic chemical compound which constitutes disinfection, according to our view; but the action of a diffused poison upon the living particles which are suspended in the atmosphere. The agents which I myself believe to be the most efficient are sulphurous acid, iodine, and carbolic acid. Further experience will probably point to many others, but we have these at present to rely upon.

A few words as to the methods of practically employing these various agents:

1. *Sulphurous Acid.*—If the chamber to be disinfected is (*a*) *uninhabited*, all articles capable of being bleached should be removed; orifices communicating with the external air should be closed, and crevices pasted over with paper. A vessel containing burning sulphur should then be introduced, and the door closed. For the sake of safety from the chance of fire by the overflow of the molten sulphur, it should be kindled upon an iron plate, and floated upon a large vessel containing water. It is convenient to place glowing embers on the plate, and then dust over them flowers of sulphur. If the room is (*b*) *inhabited*, the sulphurous acid must be disengaged in less proportion. Dr. Hjaltelin, who has employed it in small-pox wards, considers that its power of exciting bronchial irritation has been exaggerated, and that patients may be accustomed to it in a high degree. It may be employed in the manner before described; the flame of the burning sulphur being extinguished by submersion of the iron plate in the water, if the fumes become too powerful. Or, as employed by Dr. A. W. Foot, flowers of sulphur may be dropped upon a heated shovel,

and carried about the room. The generation of the gas should be repeated three or four times in the day. It is certain, however, that some persons feel it difficult to tolerate the sulphur fumes.

2. *Iodine* may be used as an air-disinfectant in a very simple manner—first suggested, I believe, by Dr. B. W. Richardson. Solid iodine is merely exposed in glass or porcelain vessels in different parts of the room. The iodine vapor is given off at ordinary temperatures. This is a very efficient mode of attaining a constant disinfection.

3. *Carbolic Acid.*—To employ this agent when the room is (*a*) *unoccupied*—communication with the external air being closed—a quantity of the crude acid should be poured into a strongly heated cup, or upon bricks, and left to vaporize. Subsequently, the floors, ceilings, and, if practicable, the walls, should be irrigated or sprayed with an aqueous solution; and the floor scrubbed with carbolic acid or coal-tar soap. Or Savory & Moore's excellent vaporizer may be employed, whereby large volumes of carbolic acid vapor may be disengaged. If the chamber is (*b*) *occupied* by the sick, the vaporizer just mentioned, which is so constructed that the liquefied acid falls, drop by drop, upon a heated plate, should be put in action at intervals two or three times in the day. The objectionable odor of the carbolic acid may be greatly masked by its admixture with oil of wild thyme. It is obvious that this method gives off the carbolic acid too powerfully for constant use. The agent, however, is so volatile as to render itself readily available for maintaining a constant antiseptic atmosphere. It has frequently been used in combination with inert powders for strewing about the room, or has been sprinkled upon cloth or other absorbent materials which have afforded surfaces for its volatilization. These measures, however, have their inconveniences and even dangers; for the strong acid is irritant and caustic, and may inflict serious injury upon those who inadvertently touch it. To obviate the difficulty, I have requested Messrs. Savory & Moore to construct for me an instrument consisting of a piece of canvas in the form of an endless band stretched between two rollers, and dipping into a tin trough to be charged with the acid. By turning a handle at the top, the roller is drawn through the trough, and thus moistened through its whole extent. After it has become partially dry from evaporation, a turn of the handle lifts up a fresh moistened surface. I have used this in several cases, and have found it to act most satisfactorily. I believe, from the data we possess, that in carbolic acid we have the most efficient and most manageable of all agents for the disinfection of air.

Lecture on the Clinical Examination of Children. By D. N. Kinsman, A.M., M.D., Professor of Diseases of Women and Children, Starling Medical College, Columbus, O.

Patience and care are required in the clinical examination of sick children. They cannot talk in most instances, and you must learn to read the *sign language* of disease.

This language is at once clear and explicit, as well as truthful, a statement which we cannot make, without very decided modifications, concerning the oral description of symptoms by adults.

When once you have learned to appreciate the objective signs or symptoms of disease, among children, you will delight more in the investigation of their diseases than those of adults. They are easily frightened, and this disorders circulation and respiration, hence you cannot commence the examination of a sick child abruptly upon your entrance into its room. There are, however, many things which you can study without contact with the child while it is becoming accustomed to your presence. You can observe the color of the skin. This is waxy in atrophy, tuberculosis and wasting diseases; yellow in icterus and post-natal discoloration. There are irregular patches of purplish hue in meningitis, dependent upon diminished power of the vaso-motor nerves; these are produced on the cheek, forehead and neck by pressure of the pillow or the nurse's arm. There is a general congestion of the face in some cases of typhoid fever in its early stages. A circumscribed patch is seen on the cheek in pneumonia and in hectic fever dependent upon tuberculosis or collections of pus. In pneumonia the patch is livid, in hectic, pink. The skin is leaden in color or blue in chills, livid in croup, capillary bronchitis, œdema of the lungs, and all diseases of imperfect aeration of the blood. A similar color is seen in cyanosis from whatever cause. There is paleness in nausea and shock. The "tache cerebrale," which is deemed pathognomonic of meningitis by Trousseau, may be brought out by a simple scratching of the skin, by the finger nail or a pencil. This is dependent upon the same cause as the irregular mottling of the cheek above described. Vogel attaches no value whatever to this sign, but I have seen it brought out in all its characteristics on numerous patients. The redness to which this name is applied persists for a considerable time after the application of the irritation, and I have never been able to produce it except in meningeal inflammation. There is also the white stripe, which may be produced upon the skin by similar means in scarlatina. There are also peculiar eruptions, which you will learn to recognize, in scarlatina, measles, erysipelas and variola.

The rose-colored spots of typhoid fever, the petechiæ of typhus, scorbutus, and epidemic cerebro-spinal meningitis, are often of great value in directing to a correct diagnosis.

In chronic diarrhœa the skin becomes of an earthy hue.

In cases of sudden fever from various causes the skin in children, after the lapse of hours, becomes covered with sudamina. These are caused by a restoration of cutaneous exhalation; the fluid cannot escape through the scarf skin and it accumulates beneath, raising it in the form of minute vesicles. This symptom is of no importance, except that it shows a relaxation of the skin, and an attempt on the part of nature to resume a normal function, which has for a time been arrested.

The eyes of a child when asleep, in health, are directed upward beneath the upper lid, and the pupils are evenly contracted. The pupils may be dilated, irregular or sluggish in their action from cerebral disease, or from disease located in the structure of the eye itself. They are often dilated to a great extent in the early stage of typhoid fever, and when this occurs it shows that the nervous system is profoundly implicated. Dilation occurs also in the later stages of diarrhœas, when there is great exhaustion. The eyelids are also partially open during sleep, in the later stages of exhausting diseases, as the result of loss of muscular tonicity in the orbicularis muscles. In the same cases there is an accumulation of sebaceous matter over the cornea, and a great loss of sensibility, for flies may crawl over the eye without any apparent inconvenience. These symptoms are indicative of great danger.

There is photophobia in meningeal or cerebral disease, also in phlyctenular conjunctivitis. Tears make their appearance about the fourth month, they disappear during severe disease, and their reappearance is an indication of improvement.

Respiration in diseases of the lungs becomes more frequent. The normal rate of respiration in children, when asleep and at rest, is about thirty per minute; when awake it sometimes rises as high as eighty per minute. The mere rate of respiration, since it is subject to so great variation, is not of any special symptomatic value. Respiration, however, is interrupted in cerebral disease, and is a symptom of great value. In croup, inspiration is noisy; in asthma and emphysema, expiration is noisy. Respiration is sighing and slow in nausea.

Cough is another symptom to be referred to the respiratory organs. It is hoarse and ringing in the commencement of croup, becoming extinguished as the disease advances; spasmodic and subintrant in pertussis; constant and synchronous with each expiration in some cases of irritation of the laryngeal nerves.

Cough sometimes exists as a symptom of worms in the intestines, and of jaundice; in these cases it is of reflex origin.

The cry of children has been minutely studied by Billard, and, while I cannot subscribe to all he has written upon the subject, there are two cases in which the cry has diagnostic value. Skoda, I think, first clearly pointed out the difference of the cries in the delirium of typhoid fever and cerebro-spinal meningitis. In

typhoid fever the cries are those of constantly changing fancies, and may be changed by external impressions, while in meningitis the cry is a constant repetition of the same word, at intervals more or less regular, with an unvarying cadence.

There is also a class of symptoms belonging to the motor system. The movements of the hand to the head, the ear, the mouth, the throat, are indications of disturbance in the several localities mentioned. In some cases of cerebral irritation and typhoid fever I have observed that the hands are kept constantly in contact with the genitals, and I have learned to regard it as a grave symptom, and that to a great extent it is involuntary.

Jactitation occurs sometimes towards the close of exhausting diseases.

The persistent flexion of one extremity points to lesion in the brain. Flexion of the thumbs or toes, contractions of the eyebrows, grinding of the teeth, and startings, are often the prodromes of general convulsion. Contraction of the lower extremities, with crying, writhing and twisting of the body, are symptoms of the colic, vesical irritation, rectal tenesmus, pricking of pins, etc., and a constant pulling at the penis in young boys, sometimes is seen in calculous disorders, and in congenital phymosis.

There is retraction of the head in meningeal disease, irregular muscular contraction without loss of consciousness in chorea, boring of the head into the pillow in cerebral irritation and rachitis.

Apathy and quietude in a child are suggestive of rachitis when there are no other indications of disease, and when this is joined to sweating about the head and general soreness, the diagnosis is positive.

Nearly all the above symptoms may be made out without touching the child, and many of them can be ascertained without waking it, if it is asleep, and you should never wake a child till you have noted the pulse, respiration and temperature, if you find it asleep.

The frequency and force of the pulse in young children has not the value for us that it has in the case of adults. It is very difficult for us to ascertain the average. An intermittent pulse points with great certainty to disease of the brain, and an extremely frequent and feeble pulse is the forerunner of dissolution.

With the digestive organs many symptoms of value are connected. Vomiting may be incidental to the conformation of the stomach, or a symptom of disease. It is one of the first symptoms of scarlatina, variola or intussusception; it accompanies abdominal inflammations, whooping cough, and sometimes pneumonia. It is one of the most rebellious symptoms of meningeal inflammation; in this disease it is forcible, and has been compared to the action of a force pump. The abdomen is tumid and distended in diarrhœa, but retracted and boat-shaped in meningitis. It fluctuates in dropsy and purulent collections in the peritoneal cavity, is

nodular from enlargement of mesenteric glands. In cases of intussusception the coils of the intestines roll beneath the surface like a mass of writhing snakes.

The stools should be carefully examined, for from them you can often derive indications for treatment.

The presence of undigested masses of casein or other albuminous matter tells you the disorder is in the stomach digestion. Excessive watery discharges in summer point to sympathetic paralysis. Worms and their ova will also indicate to you the necessity for their expulsion.

Examine the mouth and fauces, for evidence of disease, for it is in this locality where we commonly first recognize the presence of pseudo-membranous and diphtheritic deposits. The urine should be examined for sugar, albumen and urinary deposits; also for casts of tubes, and renal and vesical epithelium.

There are many things to be learned by inspection, and in obscure troubles it should never be neglected. Needles have been found driven into the brain through the fontanelles, perforating the chest and the abdomen, and plunged into the liver.

One of the earliest evidences of diseased action is found in variations of temperature. The mean temperature of newly born children is a little less, say one-half a degree, than in adults. In scleremia there is a reduced temperature from the beginning.

The production of heat in excess of the natural standard is the result of several factors. There may be increased metamorphosis of tissues; impressions upon the vaso-motor nerves, and the action of poisons upon the blood, as in zymotic diseases, where we infer an action similar to a ferment—all these may be capable of modifying the heat-producing processes; but the subject as yet is to be more fully investigated before we can be fully enlightened. This much we know, there seems to be a fully established law that according to the height of the temperature above 98.40° (Fah.), the gravity of the case and its danger is increased. Adults may have a range of twelve degrees. In children, Roger has recorded oscillations amounting to over eighteen degrees. In intermittent fever there is a great rise of temperature during the febrile paroxysm, often to 104° or 106°, but it speedily begins to decline. In typhoid fever the temperature rises to 102° early in its course, and then by about half a degree or a degree to 104°, which point it does not often pass in children, unless there are complications in the lungs or peritoneal cavity. In diseases of the respiratory organs, when the parenchyma of the lungs is affected, the temperature is notably higher than when the mucous membrane alone is affected. In tubercular meningitis there are great ranges, as well as irregularities in the course of the temperature; the maximum recorded is 108.5°, the minimum 95°. When the substance of the brain is affected, the rise scarcely ever exceeds 101°. A pulse rate

increased to 130 or more per minute and a temperature of 102° is prognostic of meningitis, while a pulse rate of 110 to 120, with a persistent temperature of 104°, points to typhoid fever as the disease.

These general facts will enable you to perceive something of the importance of a study of the temperature. For its full discussion I must refer you to the work of Seguin, and to the works on practice of medicine.

Auscultation and percussion should be practiced in cases of suspected disease of the lung. Auscultation first, and usually you can learn all you wish to know by placing the ear to the back of the chest. The general signs are the same as in adults, except that the vesicular murmur is more distinct or "puerile." By crying and expulsive movements the child can extend the range of dullness fully three inches, by the raising of the lower and abdominal organs against the diaphragm. Remember this, or you will diagnose a pneumonia in a crying child when none exists.

Percussion has not the value in children which it has in adults, because they are more restless, and by their crying obscure all true perception of percussion sounds.—*Kansas City Med. Journal.*

Practical Points in the Medical Care, and Nursing of Children. I. *Natural Feeding.* By Jerome Walker, M.D., Physician to the Sheltering Arms Nursery, Brooklyn.

Although experimental researches and practical conclusions are demanded in these times, and the substitution of positiveness for uncertainty is carefully being attained in the different branches of medicine, yet the absolutely *necessary* points in the medical care of children are only *tacitly* acknowledged by the majority of medical men to be important, for the carrying out of these points requires "too much care and time." Medical men may admit the force and truth of certain conclusions, but fail to make them of service because great patience, much study, untiring energy, and absolute love of children, are essential to their proper care.

In an effort to systemize and to obtain rules for my own guidance, certain deductions forced themselves upon me, and I was surprised and pleased to find most of them arrived at, and some enlarged upon by Eustace Smith, of London, in his admirable work on the "Wasting Diseases of Infancy and Childhood." As this work is the only one which enters into anything like a full discussion of the "points," I mention the fact, that I may not be suspected of plagiarism.

Some time since, the following questions were sent to Drs. Jacobi, J. Lewis Smith, E. S. Dunster, and J. B. Reynolds, men who from large experience, opportunities for observation, and particular attention to the care and treatment of children, were believed to be reliable exponents of all ascertained facts—viz.:

1. If mother and child *seem healthy* and child is being *nursed*, at what time do you advise the use of other food than mother's milk?
2. If other food be used, *what* is it, *how prepared* and *what* are its *ingredients?*
3. When a nursing woman becomes pregnant, do you advise artificial feeding?
4. State results of trials with so-called substitutes for mother's milk.
5. Is *dentition* the signal for weaning, or the employment of solid food?
6. Do you insist upon stated periods for nursing or feeding, as the case may be, during infancy?
7. In case of *weakly* children, or when it is thought best that the mother should not nurse, do you advise wet-nursing?
8. Is the milk of wet-nurse to be of the same age as child has been accustomed to?
9. State experience with milk older or younger.
10. State preference for one animal's milk over another.
11. Opinion of condensed milk.
12. In dilution of milk, how much water do you use?

The substance of this paper (with others which will follow in due course), shall be the consideration of the above questions. For the purpose of impressing more forcibly the "practical points," on the minds of my readers, these "points" will be discussed under the following headings:

1. *Natural* feeding of children.
2. *Artificial* feeding of children.

Natural Feeding.—Physicians, as a rule, believe with Dr. Jacobi "that in *theory* everybody agrees if it were only on philosophical or religious principles, that babies ought to be reared on breast-milk." The inconsistent *practice*, so common in all stations of life, may be traced oftentimes to the careless teaching, or the absence of teaching, of medical advisers. With the public and the profession the extra care and attention demanded by the weakness and tenderness of infancy, give rise, first to carelessness, next uncertainty, and finally recklessness.

Much has been written upon the importance of natural feeding. Such works as those of Eustace Smith, West, Vogel, Bouchut, Meigs, and Pepper, and lectures thorough and systematic as those

of Dr. Jacobi, *must* help to clear away the indifference so prevalent. "Every woman," says Stoll, "who can bear a child can suckle it, at least during the time she keeps her bed." "This short time," writes Eustace Smith, "is an advantage to the infant not to be despised. All mothers ought to try to nurse, partly for their own sakes, and partly for the child's." "How short soever the period may be during which the mother is able to suckle her child, it is very desirable that she should nurse it during that period, and also that her milk should then constitute its only food; for this secretion is especially adapted to the feeble powers of the digestive organs soon after birth, and it is far from easy to find a substitute," says West. Cazeau gives certain vague objections to mothers nursing, viz.—"Any formal contra-indication, such as a very lymphatic constitution, presence of skin disease, or of predisposition, hereditary or otherwise, to phthisis," and the ease with which formal contra-indications are thereupon seen, gives an impetus to unnatural feeding.

The fact is, most of us are too apt to allow our sympathy, from fears of supposed injury to mother or child from nursing, to take the place of calm, deliberate judgment, forgetting that experience has taught, that with children who may from necessity be compelled to live on artificial food, those generally survive and grow who have had a chance at breast-milk, for even a short time only, following birth. I believe this to be a generally accepted fact, especially *noticed* in institutions for the young.

The *prohibition* of nursing from birth, unfortunately must be left to the judgment of each individual practitioner. The causes for a *cessation* of nursing are plainly—its bad effect on the mother, the poorness and insufficiency of her milk, and the unsatisfactory condition of the child, as shown by its general appearance, mode of suckling, and gradual decrease in weight. The first is apparent to every one, the second can only be determined by careful comparison between healthy and sickly children, and the third ascertained by any decided departure from results of experiments obtained by Chaussier and Quetelet, viz.: average increase in weight for first 9 days after birth, $\frac{1}{4}$ lb., first 14 days, $\frac{1}{2}$ lb., and probably not reaching 1 lb. till 28th day; and of those made by M. Guillot at the Foundling Hospital, Paris, before and after nursing, when he finds that $2\frac{1}{4}$ lbs. of milk, avoirdupois, is the smallest quantity that suffices for the nourishment of a healthy infant during the first month of its existence, or $2\frac{1}{2}$ ounces for each act of suckling.

E. Von Siebold found "that the weight, for a few days after birth, diminished."

Though these experiments are necessarily limited, yet the rough approximation has its value.

Examination of Milk.—An examination of the milk is necessary, either in the selection of a wet-nurse, or in deciding upon the cessation of nursing for the mother, but the health of the two respective mothers and their children forms the truest guide. Four points are to be considered in this examination, and as to the effect of the milk upon the child:

1. Its suitableness and sufficient quantity.
2. Its suitableness and insufficiency.
3. Its poorness and abundance.
4. Its poorness and scarcity.

Each condition gives rise to certain phenomena in the child.

With the quality and quantity of the milk—as they should be—the child is a healthy one, i. e., with limbs rounded and well filled out, the skin clear, fresh looking, and of a light rosy tinge. Such a child sleeps a good part of the time, and when awake, is bright, nurses easily and quietly, and when through nursing leaves the breast. During twenty-four hours the bowels move two or three times, and the motions are copious and of a bright yellow color.

"When the food is suitable but insufficient, the child loses the plumpness, the muscles become flaccid and soft. His face is pale and thin, bones become prominent. He is peevish, takes the breast, at first ravenously, and then at intervals stops to cry piteously. The skin is moist and cool. The fontanelle level or slightly depressed. At night he is very fretful. In the day time may lie quietly but sucks his fingers." There is an irregularity in the fecal movements, as to the time and character of the motions.

"With the food poor but abundant, the child is usually very quiet and drowsy, not uncommonly sleeps at the breast." Eustace Smith believes this last to be a sure sign that the milk is thin and serous. "The bowels are usually costive, and the motions rather solid although otherwise natural."

When the fourth condition is present, "we find the symptoms of defective nutrition combined with the symptoms of indigestion. The child begins to waste, grows dull. The skin, at first moist, then becomes dry, except about the head. Fontanelle is depressed. The face and body, at first pale, assume a dirty yellow hue, which may or may not disappear. The bowels irregular at first, constipation alternating with diarrhœa, then diarrhœa is constant. Flatulence is common. Thrush, inflammation and ulcerations of the skin often appear. Ulceration of the corneæ may occur.

Now that the condition of the child has been considered, let us turn our attention to the milk more especially.

What is healthy milk and what unhealthy?

HEALTHY MILK.—The composition of healthy milk, according to Bouchut, is:

	At 1st Month.	At 24th Month.
Sp. gravity,	1033.11	1030.81
Water,	872.99	876.55
Solid constituents,	127.61	123.45
Sugar,	43.13	41.33
Butter,	34.05	41.47
Casein,	48.26	37.32
Salts,	1.57	1.33

Lehman says, "women's milk in general is of more bluish white color than cows or any animals, is sweeter, has a strong alkaline reaction."

Simon found by analysis made every ten days for six months, that at the commencement of nursing, casein is at its minimum, then rises to nearly a fixed proportion, the salts increasing with it. Second, sugar at its commencement is at its maximum, then diminishes. Third, butter is variable. These analyses agree with those of Vernois, Becquerel and others. Pelegot and Reiset found more fat generally toward the close of nursing. These practical conclusions form the guide in the preparation of any food for infants.

Tests.—To prove the properties of milk, certain tests are useful. Those of Vogel are explicit and concise, viz.:

1. Fill graduated galactometer with milk, let it stand covered for twenty-four hours, then the cream should at least comprise three lines of the glass in thickness.
2. Test with blue and yellow paper.
3. Taste, which should be insipid and slightly sweet.
4. The microscope.

"If nurse has been confined more than eight days, colostrum corpuscles and epithelial cells should not be present at all, or in small quantities, milk globules of unequal size or too many." "In pure milk," says M. Doune, "nothing but milk globules are seen." The same writer also shows human milk to be alkaline. I have not been able to find any reported case of acidity in human milk.

UNHEALTHY MILK.—Unhealthy milk may be inferred from its scarcity of cream, change in color and taste, generally slight, but principally from microscopic examinations.

In 1853 Vogel* first discovered vibriones in human milk. There was no fermentation, as the milk was alkaline. The child had all the appearances produced by malnutrition. From 1854 to 1861 Dr. Gibb,† in an examination of many hundred

* *Lancet*, 1854.

† Archiv. of Med., No. 7, on the saccharine fermentation of milk in the human breast.

specimens of human milk, found two genera of animalculæ where the general health was disordered during lactation, or where lactation was prolonged, or an insufficient quantity of milk secreted, found in all periods of lactation, milk varying in color, sp. gr. 1024 to 1035, and almost invariably neutral or alkaline. The children, as a rule, were badly nourished. The Doctor believes that the vibriones themselves are not hurtful, but produce a bad change in the milk. Inflammatory globules have been found by Lehman and others, when there was any acute affection in the mother. Vernois and Becquerel* found "an excess of butter or caseine always to accompany an ill state of the nursling."

We are then to decide upon the continuance or cessation of nursing by the mother, and in the selection of a wet-nurse as well, first by tests, as before described; second, the history and present constitution of the mother; third, the condition of the child.

No writer, as far as I can ascertain, indorses the assertion of M. Doune, "that there is an almost constant relation between the composition of the fluid during pregnancy and that of the milk afterwards." Cazeau thinks "that the results obtained by M. Doune may enable us to form a *probable* diagnosis as to what each woman's milk *is to be* in quantity and quality."

If the milk after examination is found to be simply poor and small in quantity, then generous diet, suitable tonics, attention to hygiene, use of warm drinks, especially at night, a moderate use of malt liquor, applications of electricity, poultices of castor oil plant leaves to the breasts, and the use of the fluid extract of the same internally, as recommended by Dr. Wm. Gilfillan, of this city, are often efficacious. To these means may be added, as a drink through the day, or better still, on going to bed, and through the night, if necessary, a very pleasant mixture of tr. ginger (or Brown's ess. of Jam. ginger), and sweetened milk; about one teaspoonful of ginger to tumbler of milk, and sweetened to taste. The use of the air-pump, as designed by the patentees of the so-called air-treatment, is probably useful. Cazeau found one nurse whose milk was sensibly increased several times by eating ground lentils. Vernois, Becquerel, and others, found that a vegetable diet made the milk richer in butter and sugar, while the solid constituents were increased by mixed food.

The suggestions of Eustace Smith are valuable. "If the mother has been over-stimulated by a too rich diet, diminishing the quantity of her food, and the administration of a gentle saline purgative, generally produces a plentiful supply of milk. Feverishness, from whatever cause, will necessarily tend to diminish the lacteal as well as the other secretions of the body.

* April, 1853. *Brit. and For. Med. Review.*

In such cases, therefore, increasing the quantity of food would have an effect the very opposite of that which it is intended to produce. *All* of the means in our power should be faithfully tried before we take upon ourselves the *great responsibility* of changing the food of infants.—*The Sanitarian.*

The Influence of Uræmic and Alcoholic Poisoning on Testamentary Capacity. Read before the New York Medico-Legal Society, by STEPHEN ROGERS, M.D.

Near the close of the year 1869, E. I. C. was quietly, if not clandestinely, married to a man whom, report says, her education, religious and secular, would have, in the ordinary course of events, led her to shun, rather than to love.

A key to the secret of this untoward occurrence is furnished by accumulated evidence, to the effect that she was an incorrigible and hopeless inebriate. Though trained, and fairly educated, in one of the best schools for girls, this vice of drunkenness seized her soon after her return home from school, and, as a consequence, she soon became the cause of constant and harassing care to, and her habits were the bane of the last days of her aged and widowed mother, who died about the date above given, leaving this only child sole heir to a considerable property.

About the time of the mother's death, this rich and dissolute girl was induced to marry, under the circumstances already stated. Rumor attributes the marriage to a necessity arising from antecedent illicit familiarity between the parties, favored by the intemperate habits of the girl. However this may be, there is no question that they were married, and the following unusual history commenced: Not long after her marriage, it appears in evidence, she became the victim of attacks which, from the general description given of them by various witnesses, would appear to have been of an hysterical character, more or less modified by her intemperate habits, for these she continued to practice after her marriage with even less restraint than before.

During these attacks she screamed, talked incoherently, and threw herself about so violently as to require control, and she is said to have recovered from them after a few minutes, or at most a few hours, with no perceptible impairment of her intelligence. It also became apparent, not long after her marriage, that she was pregnant, to which fact we may justly attribute a portion of the general and violent nervous perturbation which she at this time suffered. This perturbation was manifested, as before stated, in an especial manner by the attacks, or spells, or fits, or paroxysms,

as they are variously named by the witnesses, whose principal features I have already mentioned; and, except these, no alarming symptom occurred to her till about eight months after marriage, though the evidence is conclusive that she had, before this date, suffered many of the aforementioned attacks, and had more than once been on the verge of true delirium tremens. Either from the fear that some of those paroxysms might terminate fatally, or that her uncontrolled intemperance might induce disease which would suddenly terminate her life, or from some other fear or motive, her husband and her father-in-law, who were associated in business, went, unknown to her, some months after the marriage, to an attorney, and requested him to draw up a will for her, at the same time giving him instructions as to its provisions. The will was accordingly prepared, and in such terms as to be almost exclusively in the interest of the two parties who had ordered it drawn. They took it, carried it home, and laid it away in a trunk, as the evidence shows. There is no evidence furnished to prove that the alleged testatrix ever read, or heard this paper read, except the declarations of the parties who caused the will to be drawn. It is from them alone that we hear that she even knew of the existence of this paper till almost the hour of her death. Her husband, who, by its terms, was sole heir to her estate, alone says she approved it after reading it, and still months passed, and it was allowed to lie away in his trunk unexecuted and unwitnessed.

Thus stood the affairs of this case when, on a Monday, this alleged testatrix exhibited signs of the approach of one of her accustomed ill-turns, which, as already said, the evidence all goes to prove, were the result of alcoholic excesses on a nervous system, rendered more susceptible by the pregnant state. On the following day, Tuesday, she was unusually ill, suffered a number of the paroxysms mentioned, and drank a considerably large amount of alcoholic liquor. She was still worse the following day, Wednesday, but apparently not too ill, in her husband's opinion, to render him incompetent to prescribe for her, though a physician had visited her both Tuesday and Wednesday. On Thursday morning she was so much worse that a second physician was called, who reached her about noon, and found her so seriously ill as to give him great solicitude. He found her suffering nausea and frequent vomiting, insatiable thirst, and a sense of burning at the stomach, great restlessness, getting out of and into bed, muttering, and often noisy delirium, with hallucinations of sight and hearing, though she would obey orders, and reply to simple questions, apparently rationally.

Even up to a very few hours before her death, which took place some eighteen hours after the above visit, when spoken to she would respond, and so far as could be seen, rationally, but in a moment she would again relapse into wandering delirium. It also

appears that, up to within a short time before her death, she was able to and did rise from her bed and walk about the room—a tendency her physicians say they tried to restrain, knowing that such efforts, in her exhausted condition, might suddenly destroy her life. There is no evidence I can find that she suffered any paroxysm to which the name of convulsion could be properly applied, during the last two or more days of her life.

A consultation, attended by three physicians, was had at eight o'clock on Thursday evening, and resulted in the conclusion that, among the complications of the case, there was *uræmia*.

We are not, however, informed if there were any dropsical swellings, œdema of the lungs, or if there had been any headache, or even if the urine had been examined by the physicians in attendance. On the contrary, they state distinctly that they did not examine it, but one of them gave some of the urine to an outside party, who testifies that he examined it and found *purpurine*. It is frankly acknowledged by the attending physicians that, up to the hour of the consultation, they had not arrived at a definite diagnosis of the case, and, even after the diagnosis agreed upon at the consultation, there seems to have been much doubt as to its correctness, for, either to ascertain a cause of death, or to corroborate an opinion formed before death, an autopsy was held. In the meager records of this *post-mortem* examination given us, nothing is said of any organ till the stomach is reached, and of this it is stated, that it was found somewhat congested, not much changed from health. It is said that the kidneys were both fatty and the liver extremely so. A dead fœtus was found in the womb, and one witness ventures so far as to give his opinion that it had been dead about forty-eight hours. This was of course a very hazardous opinion, if we are to judge it in the light of the fact that there does not occur a particle of evidence that the condition of the fœtus was even considered before the death of the mother. The only testimony I can find, which even alludes to the condition of the fœtus before the death of the mother, or to the question of parturient pains, is an equally hazardous statment of one medical witness to the effect that, if the fœtus had died three or four days before the mother's death, labor-pains would have come on earlier. Nothing is better known than the fact that a dead fœtus may and often does remain in the womb for long and indefinite periods without the occurrence of labor-pains. It does not appear in evidence that the alleged testatrix in this case had labor-pains at all. However, the conclusion from the autopsy was, that death resulted from uræmia, caused by Bright's disease of the kidneys, though no pathological record is offered in support of that *post-mortem* diagnosis, except the vague declaration that the kidneys were fatty, a condition often associated with fatty, light-colored livers in habitual drunkards, but not by any means necessarily accompanied with notable functional derangement of such kidneys.

On the other hand, the whole history of the symptoms of the case, as detailed in the evidence, is quite inconsistent with this eleventh-hour *post-mortem* diagnosis. The medical witnesses agree that the condition of the blood known as uræmia, caused by disease of the kidneys, often produces paroxysms, variable in character, sometimes maniacal convulsions, and sometimes, instead, a gradually deepening state of coma. But, to account for the extraordinary and unprecedented fact that in this case the alleged uræmic paroxysms did not induce coma and abolish all sane consciousness, notwithstanding the case terminated fatally, one of the principal medical witnesses employs the following notable language, applicable to the condition of the patient eight or nine hours before death: "It was concluded that she was suffering from uræmia, and it was a subject of remark that the case was exceptional, inasmuch as her mental operations were so clear; it is quite usual in a case of that kind that the contrary should be the case." As a support to this conclusion, one medical witness is reported as saying that he had seen many cases of Bright's disease of the kidneys, and that he had not found the mind generally affected. It is perhaps too much to expect of a judge, or of lawyers, that they should have deemed it important to ascertain if this witness had had a tangible and reliable record of a case of Bright's disease of the kidneys, causing uræmic paroxysms in a woman far advanced in pregnancy, and yet which did not, at eight hours before the fatal termination, affect her mind.

I challenge the medical world to produce the record of such a case. If we exclude a few cases in which the pregnant woman, not even suspecting her imminent danger, is suddenly seized with uræmic eclampsia and her life destroyed in a few hours, no case of uræmia terminates fatally in the pregnant woman without seriously affecting the intellect many hours before death; in other words, fatal cases of uræmia in pregnant women always affect, more or less profoundly, the mental power.

The history of this case, and the pathological history of uræmic *eclampsia gravidarum*, fail to furnish the slightest grounds for the opinion that death was caused by uræmia. Had we even the usual local or general œdema attending Bright's disease, or its fibrine cylinders, and fatty, degenerate renal epithelium in the urine—which we have not—the symptoms of this case, as set forth in the evidence, would be conclusive against the theory of fatal uræmia.

The evidence certainly shows that, from Tuesday to after twelve o'clock Thursday night of the same week, this woman's condition was one of nervous agitation, insomnia, and finally of busy, muttering, and talkative delirium, from which she could be momentarily aroused by speaking to her—a condition rarely or never seen after the development of fatal uræmic eclampsia, and certainly never within twelve hours of the time of death.

Due regard for the well-known intelligence of the physicians in attendance and consultation, forbids the conclusion that, even at the consultation on Thursday, nine hours before death, there were not very grave doubts as to how much of a part uræmia played in the production of the symptoms. Had there been no such doubts, the line of treatment, approved by the best authority, would have been (what it was not) purely obstetrical, and obstetrical counsel and means would have been resorted to, which was not the case, so far as the evidence goes. Now, as no such measures were taken, and, so far as the evidence goes, the uterus did not make the slightest spontaneous effort to expel the fœtus, it is simply fair to conclude that the diagnosis of uræmia did not take very deep hold on the physicians of the alleged testatrix before her death. Had they adopted that diagnosis, they could hardly expect to be excused for abandoning the patient undelivered—as they did—some five or six hours before her death. Then the practical failure of three intelligent physicians to decide that uræmic poisoning existed in this case during the fatal illness, as well as the symptoms attending the "spells" or "paroxysms" suffered during the last year of life, disproves the theory, which has only the support of a most imperfect and unscientific *post-mortem* examination. Like too many *post-mortem* conclusions where toxical agents have destroyed life, this examination, according to all the evidence, was totally fruitless of truthful results. It did not demonstrate the cause of death.

Having discussed the improbability, if not impossibility, that uræmic poisoning was the cause of death in the case, I will now inquire into the other possible causes of that event.

If the testimony is correct—and it is so abundant both on the part of her medical attendants and others, and so corroborative one of the other, as to be convincing—the attacks from which she suffered during most of her married life, called "spells of fainting," or "spasms," by the witnesses, are very accurately described in most essays on hysteria. The testimony does not inform us whether the alleged testatrix had these paroxysms or fits before she became pregnant. This, however, is not to be regarded as of importance, it being a well-known fact that it is common for women to suffer this and other forms of nervous attacks, for the first time, after becoming pregnant. There was, however, in this case an especial cause for these nervous attacks—a cause which fortunately is not very frequent among our young and recently married women. I allude to the excessive use of alcohol. It is a fact, well understood by persons conversant with the subject, that habitual inebriety is a fruitful cause of hysterical attacks in women who have no hysteria when sober. On this account alcoholic hysteria is regarded as distinct a form of this neurosis, as alcoholic epilepsy. There is, besides, very conclusive evidence in the case, that this woman had often, during her married life, suffered other

results of the excessive use of alcohol than fits of hysteria. By his frequent experience with the attacks, or fits, or paroxysms, of alcoholic hysteria, if not delirium, suffered by his wife, it appears the husband had found out the value of laudanum. It is distinctly declared, by as respectable a witness as the case furnishes, that by order of the husband, she bought ten cents worth of laudanum for the deceased on Wednesday before her death. It is not proved that she did not take it, and the attending physician contradicts the husband's statement that it was ordered by the physician.

The apothecary who sold this laudanum says that the amount equals twelve doses of opium for the adult, or from twelve to eighteen grains. There is no reliable evidence to disprove that, whatever the physician may have ordered, she took, in addition, this twelve to eighteen grains of opium, and an indefinite amount of alcohol, during Wednesday and part of Thursday.

Now, if the husband had not regarded himself as skilled in the management of the wife's attacks, whatever they may have been—and nothing but experience or special education could have created that self-confidence—he must be regarded as careless, or daring, or criminal, for having assumed to administer a potent drug on his own responsibility; for one of the physicians in attendance swears that, on the morning after this laudanum was purchased, and probably given, he and a neighboring physician found the patient in so critical a condition as to induce them to seek counsel. Taking the most generous view of the facts, in behalf of the husband, we must suppose that his experience with laudanum in her accustomed attacks had given him so much confidence in its efficacy that he was unprepared to appreciate the graver symptoms of her final attack. He probably was unaware of the immediate danger; having seen her recover from so many spells, he presumed she would from this one.

This is the most liberal interpretation of his behavior. But returning to her symptoms, we find them enumerated as follows:

Much nervous and muscular agitation, restlessness, and insomnia; vomiting and insatiable thirst, with a burning pain at the stomach; hallucination of sight and of hearing; muttering and talkative delirium, calling the names of persons absent or dead, and yet replying promptly to questions; obeying the requests of the physicians, and in a moment forgetting them; and finally her ability to walk about the room till near the hour of her dissolution.

It would appear that few experienced medical men could mistake the significance of that array of symptoms, especially when occurring in a person of the admitted habits of this alleged testatrix. The following lines from the great master of clinical description, Dr. Thomas Watson, most aptly and fully hit the symptoms presented by this case:

"If you question the patient about his disease, he answers quite

to the purpose; describes in an agitated manner his feelings, puts out his tongue, and does whatever you bid him; but immediately afterward he is wandering from the scenes around him to some others that exist only in his imagination. Generally his thoughts appear to be distressful and anxious; he is giving orders that relate to his business to persons who are absent, or he is devising plans to escape from some imaginary enemy; he fancies that rats, flies, mice, reptiles, or other objects, are running over his bed, or that strangers are in his room. He rises to look suspiciously about the room, or to leave his bed, but is readily induced to lie down again.

"Upon inquiring into the history of the patient, in a large majority of instances you will find that he has been an habitual drunkard, and very frequently that for some reason or other this habitual stimulus has been diminished or taken away. Sometimes, however, it comes on in those who are perpetually fuddled, even though they have not intermitted their usual indulgence in drink." —"*Practice of Medicine.*"

The burning pain at the stomach, vomiting, and thirst, which were so marked symptoms in this case, are often absent in alcoholic delirium. But as relates to the mental phenomena, Dr. Watson's general description of delirium tremens comes wonderfully near to meeting every symptom shown by this alleged testatrix during her last illness.

It will be difficult, if not impossible, to account for her symptoms upon any other supposition than that they resulted from alcoholic poisoning. If that cause be admitted, it is very manifest that she was quite *non compos mentis* for at least two days preceding her death. All her declarations, expressed wishes, as respected persons and business, after Wednesday morning, were in all probability mere ravings, and totally unreliable. Among those declarations should probably be placed, that her husband had injured her by striking her in the abdomen, causing a black-and-blue stain. Though two female witnesses testify to this declaration, and to having seen the bruised spot, it is not by any means improbable that they themselves asked her if the bruise had not been made by the husband, to which she answered, "Yes." Persons under this state of mental derangement need only the suggestion, to charge anybody with any act.

The husband denies that the declaration has any foundation, and he is, under the circumstances, by far the more reliable.

The cautious testimony of the physician, who saw her between eleven and twelve o'clock Thursday night, is in all probability the most favorable representation that could be made of her intellectual condition. He declares, under oath, that she was not, in his opinion, able to fix her mind long enough upon any one subject to dictate any article in writing.

It is in evidence, however, that she would reply to questions

promptly, and apparently rationally, and would do, so far as she could, anything her physician or friends desired her to. We have seen that such a condition is very far from indicating rationality. In certain states of alcoholic delirium, responses to all manner of questions are obtained. Whether asked if they wish to die, or wish a drink, such persons are very liable to give the same reply —"Yes," or "No;" and the same if asked if they wish to see a priest or a physician. It may, hence, be readily comprehended how the subject of such a condition of mind may be brought to reply "yes," to any number of questions relative to the distribution of property by will; or how, if requested to sign a paper, he would at least make an effort to do so, though it might result in a complete bungle.

This power to respond, and this readiness to obey commands, are terminated sometimes very suddenly by the occurrence of death after some extra effort. In other cases, both the physical and mental powers fail gradually, and life does not become extinct till some hours after response and volition have failed. So far as the testimony instructs us, this impossibility of obeying requests, and of intelligent response, was reached in the case of this alleged testatrix about 12 o'clock on Thursday night, and she died about five hours after. It appears that, between 11 and 12 o'clock, having been asked if she would sign a will, she said, "Yes;" the arrangements were at once made, she was held in a reclining position, a pen was put into her hand, the place of signature pointed out, and she was requested to sign, which she did in a very imperfect manner. This having been accomplished, it appears in evidence that either she, or some other party, conceived the idea of adding a codicil. What conscious part she had to do with said codicil may be fairly inferred from the fact that, after responding to some half-dozen lines, of which it consists, she was too near dead to make it practicable to get her signature to it. She died, so far as can be gathered from the testimony, from four to five hours after this effort with the codicil, and died of asthenia. If it be admitted that she was suffering from alcoholic excesses, and that the cause of her death was even only in part of that character, not only the story of her symptoms, but the whole history of the influence of alcoholic poisoning on the intellect, and the accumulated clinical history of alcoholic delirium, go to confirm the opinion that this alleged testatrix had *no conscious appreciation of what she did or said for at least twenty, and probably seventy hours before death.*

If, however, we admit that there was a uræmic complication, or that uræmia was the chief cause of death, we encounter another unpleasant yet important fact in the case. On Wednesday, the day before the fatal symptoms came on, the ten cents' worth of laudanum was bought and probably administered, Now, it is a recognized fact that the administration of opiates in uræmia is dangerous practice in ever so skilled a hand; and hence, if that

were her condition, the result of that medication, on the husband's own responsibility, may have been disastrous, and will now, of course, never be known. It is just to the husband, however, to say that the symptoms on the following day, as described by the witnesses, all contradict the theory that she suffered from uræmia, or that, if she so suffered, she took laudanum on Wednesday.

But it is possible, however unprecedented it may be, for uræmia to be manifested in a rare form in this respect.

There are two points in the case about which the medical testimony and the lay testimony are positive; one is, that the deceased was unable to finish her last will and testament; the other is, that she died of some blood-poisoning, either uræmic or alcoholic, or possibly choleric. The only known circumstance in which the intellect of a person, fatally poisoned with urea, is sound and disposing, a few hours before death, occurs, as I have before said, in those cases where uræmic convulsions come on with little antecedent disturbance, and destroy life suddenly. This was not the case with this alleged testatrix, and therefore the idea that she died of uræmia, without convulsions, yet was of sound mind five hours before death, is quite untenable. The same law applies to the choleric or bile poison. On the other hand, if we accept the theory that her vitality gave way under the destructive effects of alcohol, she had no intellect, in all reasonable probability, for a day or two before death. In either case, we are without the slightest reason that this alleged testatrix had even an approach to a sound and disposing mind and memory after eight o'clock on the Thursday in question.

As this case would lose much of its instructive and practical features if some of the legal history of it were omitted, we will occupy a little time upon it:

As has been stated, there is no evidence, except from the principal heir, that the alleged testatrix knew anything about the contents of the proposed will. There is no evidence that it was read to her at the time she made the blundering effort to sign it. On the contrary, it is stated that it was not read. The parties solely interested in it either dictated it or witnessed it, or both; the husband, the father-in-law, and the brother-in-law, doing all these offices, and were all associated in business. The unsuccessful attempt to add a codicil was a most trifling matter pecuniarily, the whole amount thereby diverted being but a few hundred dollars.

The court before whom the case was heard, decided that the decedent was, at the time she signed the paper, of sound and disposing mind, and gets over the fact that the parties solely benefited by it should have had all to do with its dictation, and even with witnessing it, in the following way: "However indelicate or impolitic it may have been for the proponent to have persons so nearly related to him, as the subscribing witnesses to the will of

his wife, yet they were not disqualified, and I can find no reason in law why their testimony should be discredited, unless there should be other testimony and circumstances than have been presented in this case to weigh against their credibility."

Had the testatrix and proponents of this alleged will been, during the last day of her life, isolated from mankind, in the midst of some desert, or on some rock in the sea, there would be some reason for this attempt of the court to present an excuse for the fact that the parties witnessing it were closely related to the principal heir, and known to have been indirectly largely benefited by it; but when it is known that these witnesses affixed their signatures to it in the heart of a large city, and at an hour of the day when neighbors, notaries and lawyers are at their residences, and easily obtained, he will find it difficult to offer any laudable or legitimate reason for that "impolitic" irregularity.

It is often very useful to take different views of pictures as well as courts. The uncertainties of the law are thereby often shown to be quite as great as those said to be proverbial of medicine.

The same court which issued the above opinion, also, not very far from the same time, issued and subscribed to the following:

"The law is very zealous against straining after probate, when the preparation of a will is made by a party interested, to be executed by a person of doubtful capacity, and requires that, to support such probate, there must be *strong proof of intention outside of the interested party*, who claims to have acted under instructions.

"The court must take a cautious view in deciding questions of law and fact. It is an established principle that, where capacity is *doubtful at the time of execution*, there must be proof of instructions or of *reading over*. A man in a languid, torpid state may easily acquiesce in signing his name to a will set before him, more especially when he knows that there is something in the paper which he wishes to take effect; the presumption also is strong against an act done by the agency of the party benefited; the act is not actually defeated, as it was by the civil law, *provided the intention can be fairly deduced from other circumstances*. Though the court will not impute fraud, it will require *strong proof of intention*."

There is no positive or even circumstantial proof that there was any intention on the part of the alleged testatrix to give all her property to her husband. In addition to what has been said in relation to the signing of the alleged will, it may be interesting to further quote from this same court as to the mere signing of a will being an index of the state of soundness of the mind of a testator. In the same opinion, above quoted from, it is said:

"The power to affix a signature to a will, or even to sign checks, does not prove sanity, so far as the law requires, to perform such a

solemn act as the making of a last will and testament. They may be merely automatic acts." Such unquestionably was the act of signing the alleged will in this case. The admitting of this will to probate was very clearly a "strain" in violation of all approved rulings, and of previous opinions of the same court.

Courts have the power to give opinions, and the people have a right to decide if those opinions are consistent with common sense and previous rulings, and physicians have an occasional right to say if those rulings are sustained by pathological facts.—*New York Medical Journal.*

Editors' Book Table.

[NOTE. — All works reviewed in the columns of the CHICAGO MEDICAL JOURNAL may be found in the extensive stock of W. B. KEEN, COOKE & CO., whose catalogue of Medical Books will be sent to any address upon request.]

BOOKS RECEIVED.

Text Book of Physiology, General, Special and Practical. By JOHN HUGHES BENNETT, M.D., F.R.S.E., Professor of the Institutes of Medicine or Physiology, and senior Professor of Clinical Medicine in the University of Edinburgh, etc. With twenty-one Photo-Lithographic Plates. Pp. 606, with twenty-one pages of Illustrations, and twenty-four of Descriptive Text. 12mo. Extra cloth, $3.50.

Any book from this veteran teacher will be sure to attract attention and secure a sale, and the one before us, containing, as it does, the results of the long continued and careful investigations of a skilled observer and experimenter, cannot fail of wide popularity. Professor Bennett has been a teacher of systematic Physiology since 1848, and his particular views are very generally understood by students of Physiology. We find the subject divided in discussion into three parts, viz:

GENERAL PHYSIOLOGY, including—1. *Chemistry of the Tissues.* 2. *General Histology.* 3. *Physical and Vital Properties of the Tissues;* with a chapter on *Life or Vitality.*

SPECIAL PHYSIOLOGY, including—1. *Nutrition.* 2. *Innervation.* 3. *Reproduction;* with a section on *Death.*

PRACTICAL PHYSIOLOGY, discussing—1. *Practical Chemical Physiology.* 2. *Practical Histological Physiology.* 3. *Practical Experimental Physiology.*

The illustrations are photo-lithographic, and the book, as a whole, presents the greatest amount of information it has been our fortune to find condensed in the same bulk. We most heartily commend it both as a text book for students and for reference by practitioners.

We notice that Professor Bennett gives prominence in his account of the blood corpuscles to the important discovery of Professor Freer (CHICAGO MEDICAL JOURNAL, *April* 15, 1869,) with regard to the shape of these bodies, and also shows the appearance in his plates.

Diseases of the Urinary Organs; including Stricture of the Urethra, Affections of the Prostate, and Stone in the Bladder. By JOHN W. S. GOULEY, M.D., Surgeon to Bellevue Hospital, etc. With 103 Wood Engravings. New York: William Wood & Co. 1873. Cloth, 8vo. Pp. 368.

Dr. Gouley herein gives the substance of his Lectures at Bellevue Hospital, and in the Medical Department of the University of New York. It is intended to embody essentially the results of his experience in both his public and private practice, but also gives merited reference to the teachings of many others eminent in this department of surgical practice. It is a manual of the pathogeny, clinical history and treatment of some of the graver diseases of the urinary organs, with suggestions as to their early detection.

Writing largely from the standpoint of his own observation, the author recounts his cases with great clearness and accuracy, and displays, not only familiarity with the topics reviewed, but much ingenuity and originality in the adaptation of the instruments and mechanical appliances necessary for the successful management of the various difficulties encountered. It is a valuable contribution to the literature of the subject, and the most skilled surgeon will certainly find in it many important ideas for subsequent practice.

Expression: Its Anatomy and Philosophy. By SIR CHARLES BELL, K.H. With the Original Notes and Illustrations designed by the Author; and with additional Illustrations and Notes by the Editor of the "Phrenological Journal." An entirely new and enlarged Edition. New York: Samuel R. Wells, Publisher, No. 389 Broadway. 1873. Cloth. 12mo. Pp. 201. $1.50.

Clinical Lectures on various Important Diseases. Being a collection of the Clinical Lectures delivered in the Medical Wards of Mercy Hospital, Chicago. By NATHAN S. DAVIS, A.M., M.D., Professor of Principles and Practice of Medicine and Clinical Medicine, in Chicago Medical College. Edited by Frank H. Davis, M.D. Chicago: J. J. Spalding & Co., 138 Clark Street. 1873. Cloth. 12mo. Pp. 265. $3.00.

Eighteen lectures, covering quite a variety of important topics, are here collected. We find two on Continued Fever, two on the Summer Complaints of Children, and one on each of the following: Periodical Fever; Rheumatic Fever; Scarlatina and Rubeola; Respiratory Affections; Pulmonary Tuberculosis; Diseases of the Alimentary Tract; Intestinal and Uterine Irritation; Dropsy; Causes of Cardiac Disease; Neuralgia; Nervous Affections; Affections of the Brain; Cerebro-Spinal Disease; Cutaneous Diseases.

The Clinical Reports containing these lectures have appeared from time to time in the columns of the *Medical Examiner*, but from the interest in them manifested by readers, it was deemed proper to collect them in a more convenient form. Although reported by different persons, little change has been made, save in occasional consolidation of two or three Clinics in one.

As containing the opinions and modes of practice of a gentleman well known to the profession, of long continued and remarkably extensive practice, this unpretentious volume is well worth the perusal of the medical public.

Civil Malpractice. A Report Presented to the Military Tract Medical Society, at the Fifteenth Semi-Annual Meeting, January, 1873. By M. A. MCCLELLAND, M.D. Chicago: W. B. Keen, Cooke & Co., Publishers, Nos. 113 & 115 State Street. 1873. Cloth. 8vo. $2.00.

Readers of the JOURNAL will recognize this as a collection in book form of the series of articles published in the present volume. So much interest has been exhibited in them that this was considered due the profession. Further notice will be given in a subsequent number.

Archives of Ophthalmology and Otology. Edited and Published simultaneously in English and German. By Prof. H. KNAPP, M.D., of New York, and Prof. S. MOOS, M.D., of Heidelberg. Volume III., No. 1. New York: William Wood & Co., 27 Great Jones Street. 1873. Paper. Pp. 260 and 5 pp. plates. $7.00 per year. Issued semi-annually. Price for the bound volumes already published, in half morocco, $8.50 each.

New Life in New Lands. Notes of Travel across the American Continent, from Chicago to the Pacific and back. By GRACE GREENWOOD. 12mo. Pp. 415. Cloth, Stamped Cover. Price, $2.00.

This is a gathered series of letters—racy, brilliant, piquant, full of keen observation, and pungent statement of facts, picturesque in delineation of scenes on the plains, in the mountains, and along the sea. The late William H. Seward characterized her account of Mormons and Mormonism, which has been included in the book, *the most graphic and trustworthy he had ever read.* It is a book full of delightful reading all the way through, and, like a nut, has many a choice morsel tucked away in sly corners for those who find them.

PAMPHLETS RECEIVED.

Thirteenth Biennial Report of the Trustees, Superintendent and Treasurer of the Illinois State Hospital for the Insane at Jacksonville. December, A. D. 1873.

American Association for the Cure of Inebriates: Proceedings of the Third Meeting, held in New York, October 8, 9 and 10, 1872.

The Charter and By-Laws of the New York State Inebriate Asylum, (Binghamton,) etc., etc. 1873.

Report of Commissioners Appointed to Select a Site and Build an Asylum for the Insane of this State, [New Jersey.] November 1st, 1872. With Ground Plan, etc.

The Logic of Medicine. By EDWARD S. DUNSTER, M.D. New York: D. Appleton & Co. 1873. An Address before the New York Academy of Medicine, December 30th, 1872, being its 29th Anniversary.

Transactions of the Third Annual Session of the Medical Society of Virginia. Staunton, November, 1872.

Manufacturing, Agricultural and Industrial Resources of Iowa. By H. S. HYATT, Editor of the "Iowa Progress."

The Criminal Use of Proprietary Nostrums. By ELY VAN DE WASKER, M.D., Syracuse, New York.

Report of the Board of Administrators of the Charity Hospital to the General Assembly of Louisiana. Session of 1873. From J. D. Lichtenberger.

Report of the Pennsylvania Hospital for the Insane, for the year 1872. By THOMAS S. KIRKBRIDE, M.D., Physician-in-Chief and Superintendent. Pp. 70.

Florida and South Carolina as Health Resorts. By WILLIAM W. MORLAND, M.D., Harv. Pp. 20.

Contributions to the Diagnosis of Cancerous Diathesis—Carcinosis. By WILLIAM B. NEFTEL, M.D., New York. A reprint.

New Method of Preserving Tumors and certain Urinary Deposits During Transportation. By JOSEPH G. RICHARDSON, M.D., etc., etc. Philadelphia: J. B. Lippincott & Co.

A New Method of Treating Strictures of the Urethra, after External Sections. By C. H. MASTIN, M.D., Mobile, Ala. Read by request before the Mobile Pathological Society, Sept. 9, 1872. From the author.

Ninetieth Annual Catalogue of the Medical School (Boston) *of Harvard University.* 1872–73.

Transactions of the Territorial Medical Society at its Second Annual Meeting. Held in Denver, Colorado, September, 1872.

Proceedings of the Third Annual Session of the State Medical Association of Arkansas. Held at Little Rock, Jan. 6, 7 and 8, 1873.

Eighth Annual Report of the Illinois Institution for the Education of Feeble Minded Children, located at Jacksonville. To the Governor of Illinois, Dec., 1872. Organized 1865—Incorporated 1871. From C. T. WILBUR, M.D., Superintendent.

Editorial.

Vaccine Virus.

In common with our brethren of the profession, we have experienced great difficulty in procuring reliable vaccine virus, even for our own use in private practice. It is, therefore, with great pleasure that we now call attention to a circular in our advertising pages, announcing a new source of supply.

From the testimonials and letters which have been presented to us, we believe that our friends may rely upon our advertisers as performing exactly what they promise, and furnishing precisely what is asked for. It is a good time now to test whether the virus, fresh from the heifer, is a better prophylactic than that which has for generations, perhaps, been passing through the human body. Very many bits of scab will make a *sizable* sore when tucked under the epidermis, but by no means prevent small-pox. To accommodate our subscribers and others corresponding with, or visiting, our publishers at their mammoth bookstore, they have consented to act as agents, and supply calls for the guaranteed virus. Address, as upon the cover: W. B. Keen, Cooke & Co., 113 and 115 State Street, Chicago.

Los Angeles, California.

Thanks are due to our friend, J. H. Leal, M.D., well known to the alumni of Rush, for Los Angeles papers detailing the favorable character of that region as a sanitary resort, particularly for patients disposed to tuberculosis. Dr. Leal has himself found there the boon of good health which other climates had denied him. Our own opinion is especially favorable to this locality, in very many cases of tuberculosis, even when unmistakably developed.

We take the liberty, that we hope our friend will forgive, to refer those seeking information on this vital point to his address, Temple Block, Los Angeles, California.

The Graphic.

There comes to the Journal, under this title, a new daily evening paper from New York City with such remarkable peculiarities that we cannot think it out of place to notice it in our pages. It started out scarcely two months since, and has already achieved a success unparalleled in the history of journalism. Seven steam presses, aided by the most extensive machinery, have proved wholly inadequate to supply the daily demand. Three editions are issued each afternoon, containing not only all the current news, but three and a half pages of pictures illustrating all important events wherever they occur. By a new process, with the details of which we are not familiar, photography affords the type from which the imprint is immediately taken. Events of

the last twenty-four hours are thus given in a style of illustration heretofore only attempted after a considerable period by ordinary illustrated papers, such as Harper's, Leslie's, etc. The further application of this wonderful art suggests itself in numberless ways. The vast expense attendant upon even the commonest engravings has heretofore prevented their coming into more than occasional use. Within a brief period we hope to see it brought into general use for the illustration of reports of surgical cases of all sorts, and even many varieties of so-called medical disorders, outlines of apparatus, etc., etc. The invention which prints, almost instantaneously, is certainly worthy of more than a passing notice.

Aside from its peculiar character as an illustrated paper we also find "The Graphic" in every sense a *news*paper, fully up to its most enterprising contemporaries, and its various editorial notes and reflections, keen and sensible, crisp and sparkling.

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Toner Lectures.

A series of lectures has been instituted at Washington under the "Toner Fund to encourage the discovery of new truths for the advancement of Medicine." The trustees of the fund are the following distinguished gentlemen:

JOSEPH HENRY, LL.D., Secretary Smithsonian Institution.
JOSEPH K. BARNES, M.D., Surgeon General U. S. A.
J. C. PALMER, M.D., Surgeon General U. S. N.
JAMES E. MORGAN, M.D., President Medical Society, D. C.
J. M. TONER, M.D.

We take pleasure in acknowledging receipt of an invitation to attend, which we should most cordially accept if in our power. This is a most encouraging movement in the right direction, evincing a tendency to rise above questions of medical etiquette, points of order, and dubious disquisitions on "elevation of the profession" by resolution.

Another such a course should be inaugurated in Chicago, the metropolis of the Northwest. Let both the public and the profession know that earnest work, with rich reward of discovery, is going on in the domain of medical science. As illustrative of what

is being accomplished at the capital we extract the following from the Washington Republican of the 19th ult.:

"*The Nervous Force. Dr. Brown-Sequard's Lecture Last Night.* —Dr. Brown-Sequard's lecture on 'The Nervous Force'—the second of the Toner course—was delivered last evening at Marini's Hall, before an audience remarkable alike for quantity and quality. The doctor's world-wide fame appeared, notwithstanding the threatening aspect of the weather, to have drawn out the whole army of Washington scientists. In every part of the room might be seen the well-known face of some gentleman who has won local distinction by his persistent efforts in extending the bounds of human knowledge, or storing up in his mind the result of previous investigation. A few *dilletanti* hung about the skirts of the crowd, and row upon row of doctors in solid phalanx filled the body of the hall. Even quite a bevy of ladies were present, and an equal number of blushes at certain parts of the lecture.

"Professor Henry introduced the lecturer with a few laudatory remarks, referring incidentally to the recent great advance of the cause of science in this country, the liberal donations of Congress, and the bright prospects of the Smithsonian Institution.

"Dr. Sequard's remarks were concise, and replete with valuable facts. No inquiry was attempted into the occult causes and nature of the subtle power which caused the strange phenomena that he described. Once or twice some telling anecdote or bit of illustration was introduced, provoking hearty peals of laughter.

"The speaker, after a few preliminary remarks on the subject of his lecture, said that the variety of phenomena in the nervous system is much greater than is generally supposed, even by medical men. All sorts of skin eruptions are more or less traceable to nervous disorder. Experiments in animals had shown that the eruption followed immediately after exciting certain nerve centres. It was only within the last ten years that it has been discovered that a bedsore was due, not to pressure of the bed, but to spinal lesion, or spinal irritation; when, for instance, an irritation in the spinal column was produced, a bedsore appeared. They often come on parts subjected to no pressure whatever.

"Elephantiasis—a disease peculiar to South American countries —may be caused by an affection of the nerves by tumor. Bones are injured by nervous influences, as are joints, the former not only diminishing in size, but their marrow wasting. Pain in the joints, is caused by an irritation at the base of the brain.

"The lecturer referred to various physiological effects caused by an irritation at the base of the brain, giving among many instances the following: The knee in one night might be made twice its usual size. Immediate injury to the lungs might be produced. A number of white corpuscles could be made to appear in the blood; indeed, the brain itself should be considered as a part of the

nervous system. The irritation arising from severed nerves sometimes caused an injury to the spinal cord. A lesion of the spinal cord might change the structure of the brain.

"Disease of any part of the brain does not necessarily arise directly from injuries to that particular part, but may proceed from some other part of the nervous system. An irritation starting from the cerebellum, on the left side of the head, often causes loss of sight of the right eye or *vice versa*.

"An injection of cold water in the ear will make a person stagger or trot round in a circle like a horse in a circus. The Duke of Wellington, like many other noblemen, was stupid enough one time to consult a quack, who injected nitrate of silver in his ear, and set the duke rotating faster than he (the lecturer) could make his arm go. [Laughter.] The lecturer here read an extract descriptive of a high-seasoned dish, of which Frederick the Great one time partook. Not satisfied with this mess of garlic and spiced meats, he ate directly afterwards a veal pie so hot that it seemed to have been baked in hell. He was seized with convulsions. Perhaps it would have a different effect on the speaker as he was not a great man. [Laughter.]

"A great variety of effects were produced by apparently the same cause, as in the case of persons in a perspiration coming out of a theatre. Some took cold in the head, lungs, throat, and so on. In each nervous system there are parts which are easier to excite than others. Exciting certain nerves will contract blood vessels, and produce attraction of the blood by tissues. When the nerve running to the heart is galvanized, the action of the heart is stopped. Indeed, whenever we breathe we produce a decrease of action of the heart. The exchanges between tissue and blood are stopped by certain forces of the nervous system. The loss of consciousness in epilepsy is caused by irritation of the *medulla oblongata*.

"Stick a pin in your spinal column and it will produce complete paralysis. Coughing can be stopped by distending one's nostrils with the finger and thumb. A pressure of the finger upon certain parts of the face will stop sneezing, and by pulling down the sufferer's big toe convulsions may be stopped.

"The lecturer, after giving several examples of this character concluded his address by thanking the audience for its attendance and attention."

The Chronicle says: "If the doctor could have had six hours to present what he was forced to crowd into one, he would have suited himself and his audience much better, but no one could do more than he did in the same time."

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The Illinois State Medical Society.

The Twenty-third Annual Session of this Society, will be held in Bloomington, Illinois, May 20th, 1873, at 10 A.M.

The following Committees are expected to report.

STANDING COMMITTEES.

Practical Medicine.—S. K. Crawford, M.D., Monmouth; D. L. Jewett, M.D., Watseka; H. M. Lyman, M.D., Chicago.

Surgery.—J. L. White, M.D., Bloomington; J. B. Hamilton, M.D., Kane; H. W. Kendall, M.D., Quincy.

Ophthalmology.—E. L. Holmes, M.D., Chicago; J. P. Johnson, M.D., Peoria; F. C. Hotz, M.D., Chicago.

Otology.—S. J. Jones, M.D., Chicago; Chas. Hunt, M.D., Dixon; Thos. Galt, M.D., Rock Island.

Obstetrics.—T. D. Fitch, M.D., Chicago; A. Niles, M.D., Quincy; D. S. Jenks, M.D., Plano.

Drugs and Medicines.—J. H. Hollister, M.D., Chicago; E. P. Cook, M.D., Mendota; J. L. Hamilton, M.D., Peoria.

Necrology.—G. W. Albin, M.D., Neoga; J. O. Hamilton, M.D., Jerseyville; J. K. Secord, M.D., Elmwood.

SPECIAL COMMITTEES.

Galvano-Therap.—D. Prince, M.D., Jacksonville.
Hernia.—J. H. Reeder, M.D., Lacon.
Hygiene.—T. F. Worrell, M.D., Bloomington.
On the Assistance Necessary and Justifiable in Difficult and Protracted Labors.—S. B. Hawley, M.D., Aurora.
Stricture of the Urethra.—John Murphy, M.D., Peoria.
Phthisis Pulmonalis.—H. A. Johnson, M.D., Chicago.
Phys. Nerv. Syst.—C. W. Earl, M.D., Chicago.
Cerebro-Spinal Meningitis.—G. Wheeler Jones, Danville.
Locomotor Ataxia.—N. S. Davis, M.D., Chicago.
Orthopedic Surgery.—J. S. Sherman, M.D., Chicago.
To Prepare and Deliver a Public Address at the next Meeting of the Society.—George T. Allen, M.D., Springfield.

Loot.

Elevating the Standard.

Our friend of the Medical Record thinks it must be a very poor medical school which would not, in twenty years, turn out one or more who would afterwards work out for themselves a reputation that would not die with them. We dare say he is right in this; for it would be difficult to believe that a road-side public house could exist prosperously for a score of years without enabling the landlord to show on his register names whose owners had risen to celebrity after supping and lodging with him. But we think it extremely doubtful whether a landlord, in all the country round, would swallow metaphysics enough in a lifetime to attempt to establish the relation of cause and effect between his jug-tavern and that celebrity. Oh! no! Nobody but a doctor could do that.

Let us be understood. There were great doctors before medical schools, and there have been great ones since, and in despite of them. We believe a medical school never made one great man, and never will, though they are helps and spring-boards in that direction.

The new plan to force this unnatural relation, by adding to the name of the graduate the place where he was born into medicine, in the vain hope that mamma may help baby along, to say nothing of the palpable violation of our ethics it involves, is a laughable puerility. One signs himself P. Q. Z., M.D., Edin., and immediately there spring up, in the mind of the reader, winding rivers, tall, thin-clad trees, long grass, and abundance of sunshine and azure, with a couple of fig-leaf-aproned people, otherwise nude,

of opposite sexes, and desperately in love with each other. But unfortunately, Eden is spelled with an "i," and the picture vanishes. What can it mean? Why, it is intended to convey the idea that the owner of that name graduated at Edinburgh, Scotland—a weak parody upon "Help me, Cassius, ere I sink." Another writes "Harv." at the end of his name, to show that mamma is somebody, whatever may be thought of young hopeful. But the reader seeing "Harv.," has his mind running on "harvest home," and is busy recalling its festivities with the English peasants in the time of Henry VIII. Then comes "Jeff.," and "Penn.," and "Belle," and "Lou.," and "Cin.," and "Nash.," and a whole Babel of jargon of thundering sound, signifying nothing—non-asinine.

Graduate in Medicine from our honored old University on yonder hill, rely on nothing under God but your own brave soul, with fixed determination of purpose to *deserve* distinction, and, if life lasts, it will perch upon the standard that *you*, not I, have raised. Here, as elsewhere, you must work out your own salvation.

I plant my standard in the milky way,
Upon the very key-star of the arch,
And to my hesitating pupil say,
"Look ye steadfast, upward, and forward, march!"

Let its bright silken streamers rustle there,
Amid the gems and glories of the sky.
While pointing to it, in that virgin air,
I ask opposers, "How is that for high?"

—*Nashville Jour. Med. and Surg.*

Attempted Reduction of Dislocation of Shoulder Joint — Rupture of Axillary Artery — Death.

The patient was admitted into the Royal Infirmary, Edinburgh, under the care of Mr. Lister, on account of an unreduced dislocation of the shoulder joint of seven weeks' standing, but said by the patient himself to have been of only five weeks' duration. Professor Lister, by manipulation, and subsequently by the pulleys, attempted to reduce the dislocation, no undue force being exerted by either method. During the attempt a sharp crack was heard, and subsequently a swelling, which ultimately reached the size of an adult head, took place on the dorsal and posterior part of the scapula; the occurrence being due to the rupture of the axillary artery, and subsequent effusion of blood into the surrounding textures.

Without hesitation, Professor Lister cut down on the spot, and proceeded to search for the ruptured vessel, opening, by his incision, into a sacculated structure into which the blood had been effused, and from the bottom of which the blood appeared to

flow. Careful search for the source of the hemorrhage was, after a considerable period of time, rewarded, by finding that the bleeding-point was situated on the posterior aspect of the artery itself—a situation which, the Professor remarked, was rather unusual, and not likely to be easily got at or seen. The vessel was accordingly ligatured above and below the bleeding point, antiseptic measures being taken during and after the operation to prevent the occurrence of putrefaction. The patient rallied immediately after the operation, but sank and died in about three hours subsequently.

Professor Lister remarked on the importance of the occurrence from a practical point of view, at the same time remarking on the obvious duty of at once cutting down and securing the bleeding vessel.

A dissection of the parts showed several features of interest. The humerus had attached to its staff a little spiculum of bone, which was evidently the immediate cause of the perforation of the artery, which itself was highly atheromatous, and so rendered the more friable. The head of the bone had, during the comparatively short period of seven weeks, formed for itself a false glenoid cavity, in which it had been reposing; the existence of this structure forming an additional element in the difficulty of successfully or readily reducing the dislocation. Short as the period had been, it was instructive (said Professor Lister) to note that this cavity was not only of cartilaginous texture, but even exhibited traces of osseous development also.

Professor Lister, in conclusion, regretted that he had not instructed his house-surgeon to send for him at once on the intervention of the serious later symptoms, as the case would have presented the most favorable aspects for the performance of the operation of transfusion of blood from the veins of a person willing to furnish the requisite supply.—*Med. Times and Gazette*, Feb. 1, 1873.—*Medical News.*

What is Homœopathy?

According to the census of 1870, unless our information is wholly incorrect, the proportion of homœopathic practitioners was a fraction over seven per cent. of the whole body of the medical profession in the United States. Be it remembered that this is after over thirty years of effort to propagate the doctrines of that peculiar school, and in spite of a strong tendency on the part of physicians everywhere to investigate, and to adopt, if satisfactory, whatever new principle or practice promises to aid them in the battle with disease. Can it be, then, anything but the warmest enthusiasm that enables an orator before the New York State Homœopathic Medical Society to say, "Who will deny that, at no distant date, either under the name of the Homœopathic School, or adopting a title now often used synonymously,—that

of the 'Modern School of Rational and Liberal Medicine,'—we may see the two great branches of the medical profession, for many years estranged and often hostile, united in one solid phalanx, under the ample folds of that banner, unfurled to the gaze of an astonished world by the genius of Samuel Hahnemann, on which, inscribed in letters of living light, are the words '*similia similibus curantur*,' and, actuated by that philosophic and Christian motto, *in certis unitas, in dubiis libertas, in omnibus charitas*,' marching onwards to the attainment of conquests over disease and death, such as have never yet been depicted in the dreams of the most ardent medical enthusiast? Then will have come the millennium of medicine. God grant a consummation so devoutly to be wished!"

No doubt the homœopathists would be glad to have the profession at large adopt their absurd dogma, to which they themselves, in their practice, do not adhere. No doubt they would be glad to have us, with all the results of scientific research, and the records of past battles gallantly won or as gallantly lost, come over to their ranks. But why do they not show us one single case in which a remedy produces, in the healthy body, the genuine symptoms of a disease in which it is known to be useful? Why do they not show us that belladonna will induce something more than the most superficial and unimportant phenomena of scarlet fever? that chloral or the bromide of potassium will prevent sleep? that mercury or iodide of potassium will give rise to the essential secondary or tertiary manifestations of syphilis? How do they explain the perversity with which the entire scientific world declines to recognize them? We cannot suppose that Humboldt, Arago, Sir Humphrey Davy, Agassiz, and a host of others—dead and living—men of inquiring minds, intolerant of any bar to the freest examination of every theory or hypothesis in regard to the secrets of nature,—would have hesitated for one moment to give in their allegiance to any doctrine, if it could maintain itself by facts.

From our own free wanderings in the field of homœopathic literature, we are convinced that the more extensively regular physicians are acquainted with it, the more strengthened will they be in their sense of its absurdity. Even the advocates of that dogma find that their own school affords them insufficient nutriment; for in a recent number of one of their leading journals, out of thirty quoted items, *twenty-five* were from regular medical sources, *three* only from homœopathic; one was from a secular paper, and one was not credited at all.

We answer the question which heads this article, by asserting that homœopathy is a mere name, signifying nothing.—*Philad. Med. Times.*

The Horse-Influenza.

Our readers will have had such a surfeit of items in the daily papers with regard to the influenza now prevailing among animals of the horse kind, that we propose only to call attention to a few of its more remarkable features.

In the first place, the singular rapidity of its progress precludes the idea of its spread by contagion. It was first known in Canada, less than six weeks ago, and since that time has spread over the whole of New York, and the Eastern States, and Pennsylvania, and is now (November 9) felt in Baltimore. Only if very large numbers of horses were moving in this southward direction would the theory of its propagation in this way be at all tenable. Then, again, it has affected all the horses, in small villages and in the country. Some atmospheric convection, independent of wind-currents, must necessarily be the means of its spread.

Secondly, the universality of the disease is to be noted: we may perhaps say that not a single horse has escaped, as even those which have not been actually laid up have shown the effects of its depressing influence. Mules seem less susceptible to it than horses, but many of them, and we believe all more or less, have felt it. Within the memory of the oldest horseman there has never been such a visitation; and indeed the peculiar inconveniences entailed are such as would have impressed the recollection of an epizootic of the kind upon the minds of the public as well.

Thirdly, the exemption of all but animals of the horse kind. There have, it is true, been a few cases of influenza in the human species, but the health of the city may be said to be exceptionally good, and the mortality returns are very small. The vague rumors of horned cattle being affected, which have prevailed from time to time, are not confirmed so far.

The deaths seem to have been limited to such horses as were previously in poor condition, from age, over-work, or disease; some also, from neglect in the early stages of the epizootic, have been attacked with fatal pneumonia. It may be that, like the poison of scarlatina or small-pox, the peculiar cause of this disorder is in some cases so virulent as to hurry off the animals affected before the symptoms are fully developed; but of this the evidence is not yet satisfactory. Another cause of death has doubtless been the working of horses before they had fully recovered their strength, congestion of the lungs being especially apt to occur under such circumstances, and to run on into fatal pneumonia.

We trust that from the intelligent and careful investigation of this remarkable scourge, there may be derived some facts bearing upon the natural history and mode of propagation of the zymotic diseases which affect the human family.—*Ibid.*

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Original Communications.

ARTICLE I.—*Clinical Lectures on Diseases of the Ear.* By E. L. HOLMES, M.D., Professor of Ophthalmology and Otology, Rush Medical College; Surgeon to Illinois Charitable Eye and Ear Infirmary, Chicago.

AURAL CATARRH.

Gentlemen—Catarrhal inflammation of the middle ear, in its acute or its chronic form, is a serious and obstinate affection. You must have become impressed with this fact both from your own reading and observation at these clinics. Remember that this class of diseases is a special illustration of the general fact that nearly all mucous membranes, once affected with catarrhal inflammation, are rendered susceptible, and consequently liable, to relapse.

The disease is, in popular language, "nothing but a cold in the ears." To those of you who have seen so many affections of the eye, throat, lungs and other organs, produced by colds, these words "nothing but" must seem wholly misapplied.

Recalling to your minds the mechanism of hearing, you can readily comprehend how inflammation of the mucous membrane of the middle ear, either acute or chronic, by producing thicken-

ing of this tissue, must retard the vibratory motions of the membrana tympani, ossicles, especially the stapes, and of the membrane of the foramen rotundum.

The immediate cause of this affection is generally exposure to changes of temperature. The inducing causes may be the susceptibility produced by diseases of the throat, measles, scarlet fever, and, less frequently perhaps, by syphilis.

The disease is often attended with trouble of the throat and nares. The mucous membrane of the upper air passages should always be carefully investigated in every patient with affections of the middle ear.

The symptoms of chronic aural catarrh are usually more or less gradual, sometimes sudden but not extensive diminution in the acuteness of hearing, *tinnitus aurium*, more or less thickening and opacity of the membrana tympani. This membrane is often more concave and irregular in its surface than in the normal condition. The vessels near the handle of the hammer are frequently congested. In some cases, collections of mucus may be detected, in examining the membrane, by the presence of a dark appearance in a portion of the membrane, which is analogous to hypopion in the eye. It is important for you to study the use of the otoscope in detecting the presence and the peculiar qualities of the sounds produced by forcing air through the eustachian tubes into the middle ear, in making strong efforts to blow the nose when the nostrils are closed.

The symptoms of the acute form are, pain, sudden and great loss of hearing, and great redness of the membrana tympani, often extending to the walls of the external meatus. The accumulations of mucus may so far fill the middle ear as to produce a convex appearance of the membrana.

The pain is usually severe, and is accompanied with throbbing and with subjective sounds.

Occasionally cases will be presented in which a "cold" has apparently produced a loss of hearing greater than the other symptoms may seem to indicate.

Inflammation of the middle ear is quite common in young children. As general practitioners you should acquire the habit of never leaving a crying infant without examining the ears. Careful and experienced physicians have for days overlooked the presence of serious disease of the ear in infants evidently in great pain.

In considering the differential diagnosis between catarrhal deafness and deafness from disease of the auditory nerve, you should not forget to study the use of the tuning fork. If neither this instrument nor a watch can be heard a short distance from the ear, but can be heard as readily as in health, when placed in contact with the head or teeth, you can be reasonably certain that the disease is confined to the middle ear, or rather perhaps to the vibratory apparatus, external to the labyrinth.

In regard to the prognosis, I can only say you should be guarded in expressing your opinion, for the ear once having suffered from a catarrhal inflammation, is liable to suffer relapse on exposure to cold. A very large proportion of the cases you will meet, will probably remain with hearing more or less impaired.

In the treatment of the acute forms, where there are severe pain and redness, there is need of promptness and energy.

A few leeches should be applied to the mouth of the meatus, or in front of it. Water, as warm as can be well borne, turned frequently into the meatus, will greatly aid in relieving pain, as also hot compresses applied on and around the ear. Hypodermic injections of morphine may be necessary to secure rest. If you can control the patient, as regards exposure to cold, let him take frequently either hot or Turkish baths, and make free use of diuretics.

As soon as collections of mucus or pus are observed pressing the membrana tympani outward, you should at once perforate this membrane, to ensure their evacuation. The collections must be further removed, either by the use of Politzer's air bag, now so often employed, or by carefully forcing some mild astringent solution into the external meatus through the opening in the membrana tympani and through the eustachian tube.

The syringe should be provided with a nozzle of soft rubber, large enough to close the mouth of the external meatus.

In the chronic and sub-acute forms of the disease, our attention must be carefully directed to the treatment of the mucous membrane of the throat, nares, and eustachian tubes.

The use of gargles, injections of solutions and vapors, are of special importance. These are usually medicated with alum, zinc, tannin, chlorate of potash, muriate of ammonia, or iodine. A few drops of a strong solution of nitrate of silver, thrown just against the mouth of the eustachian tube, where the mucous membrane of this

passage is especially implicated, is sometimes of service. This and other remedies must be introduced very carefully by means of the eustachian catheter. The various uses of this instrument should be studied by you all. While you are pursuing practical anatomy, do not omit to observe, repeatedly, the relative position of the opening of the eustachian tubes and posterior nares. Practice your hands in the gentle introduction of the catheter into these tubes. The use of Politzer's air bag, which you have so frequently seen, should especially claim your attention.

I have sketched a mere outline of the treatment of the disease under consideration. If you have an opportunity of attending the Eye clinics of the large cities of this country, or of Europe, you will be convinced, I think, that our most approved treatment is competent to give permanent and radical relief in but a small minority of cases.

Do not, however, neglect nor despise the means we possess, for any treatment that will accomplish so much to relieve a great physical infirmity, with its attending mental suffering, is worthy of careful study.

ARTICLE II.—*Remarkable Case of Injury from Glass.* By GEORGE W. KITTELL, M.D., Shabbona, Ill.

The following case, of which I am induced to give a brief account, is a real curiosity. Its rarity, and, almost tragic events, have been a daily source of wonder and excitement to our community. Space will not allow me to give the details of all that occurred to my patient during a period of eight years. It would fill a volume. This account will be deficient in many minor particulars, as no notes were kept of the case.

December 24th, 1864, a young lady named Caroline Low cut her hand severely while replacing a window. She intended striking the top of the sash with her fist, but, missing it, the hand passed through the upper pane, about three inches from its lower edge. The glass broke diagonally; three triangular pieces entering the ulnar border of the hand opposite the middle of the palm. The external wound was one and a fourth inches in length, the same

as the base of the longest piece; so they must have slid one upon the other as they entered.

On inquiry, Miss Low told me the glass reached nearly across the palm. To mitigate the pain she pressed the right hand firmly between the thumb and fingers of the left, thereby breaking the glass in many pieces. She obstinately refused to have medical aid until three weeks had elapsed, when it was feared she would lose the hand.

Dr. Z. C. Brown was called. He found the hand and arm enormously swollen. He made several incisions in the palm between the fingers, and plugged the wounds with lint. The hand was so swollen that no large pieces could be detected. Topical applications to reduce the swelling were made. On the following day the lint was removed, and was found covered by shining particles of glass, many of them smaller than a pin's head. This operation was repeated several times with like results, and the attendant thought the glass was all out. She was then for a short time under the care of Dr. S. N. Fish, who pursued the same treatment with like results.

May 1st, 1865, she came under the notice of the writer. The actual amount of glass in the hand was not even suspected, and though on full inquiry I became convinced that the amount was large, I was not much less surprised than others at the result. If the broken pane had been carefully examined at the time the accident occurred, it would have conclusively settled a vexed question.

Subsequently when the pieces actually removed, from the crown of her head to the soles of her feet, were numbered by thousands, no wonder the credulity of the public was sorely tried. Some of the plebeians thought there was nothing miraculous in it. Some said she swallowed the glass; others that it was produced in the system by medicines I had given her; others still, that the doctor pounded up the glass at home, and reported that he took it from the patient for a sensation.

At the time I saw the patient first the wounds were all healed, leaving the hand contracted and distorted. I made an incision over a tender spot near the thumb, and filled the cut with lint. I counted twenty pieces on it next day when it was removed; they were larger than any before obtained, and were preserved.

The patient suffered considerable pain, and came to my office every two weeks to be lanced; much glass was removed in this way, the wounds healing with remarkable rapidity.

In August, this year, a large superficial sore appeared at the elbow, which was dressed with lint and simple cerate. A large number of small particles of glass were removed on the lint and with small forceps. The wound continued to discharge glass for four months, when it healed up. In the November following, a larger sore appeared at the shoulder with the same history.

During the spring of 1866, a large sore, in all respects like the others, made its appearance on the upper part of the chest.

In the following summer, glass was removed from the scalp, and numerous pieces worked their way into the eye through the conjunctiva, causing intense pain.

In January, 1867, the soles of the feet became sore, and some glass was discharged. The feet were lanced and the wounds plugged with cotton. She was soon severely attacked with tetanus, which continued two weeks. She was treated by large and continued doses of morphine. Sixty grains were given, in grain doses, in six days.

When she had been free from spasm two weeks, another attempt was made to remove glass from her feet, which was followed as before by tetanus. Large doses of morphine were again given, which controlled the spasms.

The attack continued seven weeks. One cause of her prolonged sickness was, two elderly female friends who would not administer the medicine in my absence, saying so much morphine would kill her. They could not see that it would be as well to die of morphine as tetanus. She received another shock from the visit of an honest clergyman, who in spite of my remonstrance repeated his visit.

Her convalescence, if it might be so termed, was tedious, and for a long time she was so sensitive that cutting the hair or nails would bring on a convulsion. She improved very slowly.

In September and October, 1867, she complained of pain in the head and neck; turning the head suddenly would bring on a convulsion. The first piece of glass large enough to show two polished surfaces, was at this time taken from the neck. Shortly after, a pointed piece half an inch long was removed from the ear by the

forceps. The inflammation and suppuration which followed, destroyed the power of hearing in that ear.

Immediately after this, a piece of glass five-eighths of an inch long cut its way into the œsophagus and was removed by an emetic. Afterward, on each of two successive days, two pieces were removed in the same manner. One, the largest ever obtained, was one and one-fourth inches in width. The four pieces fitted exactly, the whole forming a triangle two and three-fourths inches in length. Her throat was badly cut in the removal of these large pieces, and bled profusely. When the wounds healed, the canal was so much contracted that the swallowing of solids was ever after difficult. From this time about twenty pieces of various sizes and shapes were removed.

Until September, 1868, nothing unusual occurred except the expectoration of blood with some small particles of glass. The glass probably cut into the pharynx above and thus found entrance into the lungs and were thrown off as any other foreign substance.

At the above-mentioned date she was stopping at a hotel in Shabbona. The room next hers was occupied by a dentist, who was one of a horse-stealing gang. She overheard them in their deliberations, of which they by some means became aware and undertook to destroy her by poisoning.

She was taking morphia at the time, the powders being kept on a shelf in her room. Some one entered the room in her absence, took out the morphine and placed arsenic in the same papers. I was sent for in haste, and found my patient with unequivocal symptoms of arsenical poisoning. Vomited her freely and administered magnesia as an antidote. She soon recovered. To prevent suspicion on the part of the rascals, I told the friends she had cholera morbus, and my statement was confirmed by a relative who is a physician and saw her next day.

Further attempts were made with strychnia as had been done with arsenic. The medicine was placed on the shelf as before, and regularly removed by the patient who gave them to me. The medicine she actually took was kept in another place. I tested the powders taken from the shelf and all contained strychnia.

As soon as she was able she prepared to return home. She placed her medicine in a small satchel, and laid it on a table. She left the room for a moment only, but events proved that some

one was on the watch, for the first powder she took after going home produced such violent symptoms as to leave no doubt as to the cause. I happened to call in a short time, but unfortunately had no antidote with me, and I was obliged to send three miles for medicine. The inflammation which followed nearly destroyed her; her convalescence was slow, and she never fully recovered.

Although the glass had been nearly all removed, her naturally strong constitution was wrecked, and there was a condition of general irritability and nervous prostration. The irritation of occasional particles of glass, of over exertion, or exposure, would bring on fever, delirium and convulsions, so that she required almost constant medical attention. Her condition gradually improved until July, 1872.

It seems as if fate continually pursued her with some dire and unusual affliction; and had she not possessed an iron constitution, she must have succumbed long ere she did.

In July, 1872, while eating greens, she swallowed a potatoe bug and its eggs, which most unfortunately had escaped the cook's notice. She was not aware that anything was wrong until she was taken with fever, pain in the stomach, vomiting, etc. I was not sent for until next day. I learned that she had vomited frequently, and supposing that the offending matter had been removed, I administered remedies to check the vomiting, and subdue the inflammation. When I made my next visit I became satisfied as to the cause of the difficulty, and gave an emetic, followed by copious draughts of warm water, and on a careful examination of the matters ejected, was able to discern legs and other parts of the bug. The inflammation subsided. Her disordered nervous system was unable to sustain the shock, and spinal irritation was induced. She was treated with counter-irritants, tonics and anodynes. There was at times temporary improvement, but she grew worse in November, and died of exhaustion, December 4, 1872.

Thus ended a most unusual and remarkable case after almost eight years of intense suffering. No one could have suffered more. A small particle of dirt, all of us know, is a very unpleasant thing to have in the eye; but how trifling a matter it is compared to a piece of glass, with sharp cutting edges in every direction. I have merely given the outlines, as a more minute account would require too much space; but one more curious phase of her his-

tory should be noticed. Similar cases are on record, and this will serve somewhat to confirm them. I refer to clairvoyance.

In this case it was not produced by mesmerism, but by chloroform, and she became more and more susceptible to its influence. In the later stages of the case, this state came on occasionally from over excitement.

Before the accident which introduced the case, she was given chloroform for the purpose of having a tooth extracted. The doctor who administered it, had not always kept that moral rectitude, in some particulars, which becometh a physician. Shortly after the inhalation commenced she began to upbraid him for his conduct. The doctor was frightened, and accused a man, the only one beside himself who knew the circumstance, of telling. The man protested that he was innocent, for he really was. When Miss Low returned to consciousness she knew nothing of what she had said, or of the occurrence she had related.

My first knowledge of this effect of chloroform on her came in this way: After removing some glass one day, and while she was still under the influence of the anæsthetic, I was called out for a private interview. The weather being pleasant, we stepped into the orchard and sat down under a tree. When I returned she remarked, "you thought yourselves very cute when you went into the orchard to talk; but I heard it all." I then asked her to tell what she heard, and she related our conversation correctly. She had not left the bed in my absence, and could not see the orchard, as it was on the other side of the house, neither had she been told that I left the house. In fact, she was apparently unconscious the whole time, and when she had fully recovered from the influence of the chloroform, she knew nothing of what had been done or said. I had known her to say strange things while anæsthetized, but until now had not understood it.

Sometimes, after having taken chloroform, she would rise in her sleep and go miles, in her night clothes, to find articles that had been lost. She never had any knowledge of these nocturnal expeditions in her waking state, except the proof afforded by the presence of missing articles, and the condition of the bed in the morning.

Her clairvoyant state was another existence to her. When in this state she would tell anything that had transpired at other

times, while in the same condition. I have given her chloroform in order to enable her to find lost articles, which she could always do. Some little thefts, and sometimes bigger ones, were made known in the same way.

When very sick she was often delirious, sometimes for hours, which led many people to suppose she was insane, and some said she was possessed of the devil. It was from this fact that the horse thieves escaped punishment; many would take oath in court against her sanity. She was the principal witness, and popular prejudice, backed by some physicians, for no laudable purpose, carried the day.

To relate all that she said and did, while clairvoyant, would make a long and interesting chapter. The most interesting occurrences of this kind must be omitted because of their length. If any doubt is entertained as to the truth of these statements, any further proof desired will be gladly furnished by the author.

ARTICLE III.—*A very Rare Abnormal Condition of the Iris.* By E. L. HOLMES, M.D., of Chicago.

J. T., æt. 23, student of medicine, consulted me last December regarding a singular affection of both eyes, which, he stated, his parents believed to be congenital. The patient was of light complexion and hair, and had always enjoyed good health.

I found clusters of peculiar jet black fungoid growths surrounding the whole pupillary border of each iris, and projecting two or three lines into the anterior chamber—similar to the growths —the corpora nigra—so often found on the pupillary edge of the iris in horses.

These little tumors, seven or eight in number, five of which were relatively large and three very small, were pedunculated, quite regular in form, and pear shaped. They seemed velvety but not glossy, and less granular than the "corpora nigra" in horses. The pupils, or rather apertures, in the centres of these clusters were very narrow and irregular.

At the distance of a few feet scarcely any abnormal appearance could be discovered. Strangers and even associates have seldom

remarked the peculiarity. These growths, jet black on a very light blue iris, presented the appearance at a short distance of a normal pupil, which, however, was quite elliptical in each eye.

The iris lay in its normal plane and showed no indication of tumors situated behind it. In the left eye one of the smaller tumors, attached to the lower border of the pupil by a very minute hair-like peduncle, had free tremulous motions with every movement of the eye.

There was no perceptible contraction or dilatation of the pupil on exposure to the influence of light and shade, although a very slight spasmodic action of the iris was perceptible.

The patient had always supposed till recently that his vision was perfect except for distant objects. The myopia was greater during childhood than subsequently. During the past four years he has worn concave lenses No. 30, for distant objects, and has always been able to study and write constantly without difficulty.

Four months ago vision of the left eye began to fail; useful vision is now almost extinct. Six weeks ago the other eye began to fail. At present with the left eye the patient can read common print indistinctly for a few moments, when the letters become almost invisible.

By means of a stenopaic slit held in a proper position, or even a minute circular aperture in a disc, vision is much improved.

Four weeks ago vision was rendered almost perfect in the left eye and much improved in the right one, both for distant and near objects, by a concave cylindrical lens No. 20, so placed that the axis, passing from above downward and outward (in each eye) formed an angle of 45° with the perpendicular diameter of the cornea.

On account of the extreme minuteness of the pupils an ophthalmoscopic examination of the fundus was impossible, especially as I did not wish to try even so simple an experiment as dilating the pupils with atropine.

I advised iridectomy in the right eye, but have not heard from the patient since my last examination in February.

Selections.

The following article is copied from the *Medical Press and Circular*, of Feb. 5th, 1873, which is published simultaneously in London, Edinburgh and Dublin, and is one of the oldest and most extensively circulated medical journals in Great Britain. The article was prepared expressly for that periodical by the request of its editor, Professor James, and contains, as it states, only a synopsis of Dr. Allen's views on the subject.

The True Law of Population. Based on Physiology and Psychology.

By Dr. NATHAN ALLEN, of Lowell, Mass.

It may appear almost presumptuous to assume the phrase, "true law," which might seem to imply that all other theories were false or not true; but such is not our meaning. It is intended to express this sentiment, that whatever views are entertained on this subject, or however diverse they are, they must all, as far as true, be subservient to a great general law which has its origin and foundation in physiology.

More than thirty years ago, a work was published in London with this title, "The True Law of Population shown to be connected with the Food of the People." The merits of this work consisted very much in the evidences which physiology afforded in support of its theory, arising from the effects that food combined with other agencies had in changing physical organization. But, unfortunately, Mr. Doubleday, the author of this work, as well as some other writers upon population, have not been thoroughly educated in the principles of this science.

As this subject is so vast and complicated, a large volume would be required to discuss it properly, especially in expounding any new views; we can present here only a few points or heads of topics, by way of suggestion and illustration. An examination into the views and theories of most writers upon population shows that the laws which they lay down for its increase have been controlled generally by agents or objects entirely external to the body, and some of them hold only remote or indirect relations to it. Now, while these external agents, such as food, climate, exercise, etc., may operate as powerful factors or as secondary causes, we maintain that there is a great general law of propagation which extends through the whole animal and vegetable kingdoms. Whatever influences these agencies may have in the development of the body, the most important agent or law of all, the law that shapes its life, character, and destiny, it would seem, must have its origin and seat somewhere in the body itself. What then is this law? It may be defined thus: *It consists in the perfectionism*

of structure and harmony of function; or, in other words, that every organ of the body should be perfect in its structure, and that each should perform its legitimate functions in harmony with all others.

While this perfect physical organization is nowhere to be found in nature, we can readily conceive of such a standard, and that there may be all manner of approximations towards it. The nearer this standard is reached, the more completely the law of propagation can be carried out. This theory is supported by evidences deduced from physiology in a variety of ways.

All diseases interfere with the operation of this law, especially those that are considered hereditary. This class of diseases become intensified by each generation, and tend rapidly not only to impair the vitality, but to blot out the existence of the race. There is another class of diseases or weaknesses, described under "sterility," "barrenness," and "impotence," from which strong evidences may be derived.

There is a general principle in physiology, favorable to this theory, which is thus described by Dr. Carpenter:

"There is a certain antagonism between the nutritive and reproductive functions, the one being exercised at the expense of the other. The reproductive apparatus derives the materials of its operations through the nutritive system and its functions. If, therefore, it is in a state of excessive activity, it will necessarily draw off from the individual fabric some portion of aliment destined for its maintenance. It may be universally observed that when the nutritive functions are particularly active in supporting the individual, the reproductive system is undeveloped, and *vice versa*." Let, therefore, any class of organs or any parts of the body be unduly or excessively exercised, and it requires the more nutrition to support them, thereby withdrawing what should go to other organs. In accordance with this physiological law, if any class of organs become predominant in their development, if what may properly be denominated one of the temperaments becomes excessively developed, it conflicts with this great law of increase. In other words, if the organization is carried by successive generations to an extreme—that is, to a high nervous temperament—a predominance of the brain and nervous system; or, on the other hand, to a lymphatic temperament—a predominance of the mere animal nature, it operates unfavorably upon the increase of progeny. Accordingly in the highest states of refinement, culture and civilization of a people, the tendency has always been to run out in offspring; while on the other hand all tribes or races sunk in the lowest stages of barbarism, controlled principally by their animal nature, do not abound in offspring, and, in the course of time, they tend also to run out.

The same general fact has been observed among all the abnormal

classes, such as idiots, cretins, the insane, the deaf and dumb, and, to some extent, with extreme or abnormal organizations, such as are excessively corpulent, or spare, as well as of unnatural size, either very large, or diminutively small.

A similar fact has been observed among distinct classes, such as the nobility, the aristocracy, etc., where by inheritance, refinement and culture the nervous temperament becomes very predominant; it is found that such families in the course of a few generations do not increase in offspring, and, not unfrequently, in time, they become extinct.

A similar result has also followed the intermarriage of relations, from the fact, that the same weaknesses or predispositions are intensified by this relation. Again, if we take those families and races which, for successive generations, have steadily increased most, we shall find that, as a whole, they possess a remarkably healthy, well-balanced organization. Illustrations of this type, we shall find, abound most among the middling or working classes of the Germans, the English, the Scotch, the Irish, and the Americans.

The laws of hereditary descent afford strong evidence in favor of some general law of propagation. The fact, that "like begets like," subject to certain variations and conditions, is a proverb that has been too well attested to be called in question. The union of two agents, possessing similar and dissimilar qualities, constitutes an important condition to which this law of propagation is subject. While it may be difficult to point out, in all cases, the exact results of hereditary influences, still it has been found on a large scale that, in the aggregate, there was the most unquestioned evidence of such agency, and that it was minute and extensive, and continued for successive generations. When this department of physiology becomes thoroughly understood, hereditary influences will more readily be traced back to their primary sources, and to the secondary causes operating to change and modify them. Now, the same evidence that proves the existence of hereditary agency, implies that there is somewhere a general law, of which this is part and parcel; and no one thing will throw so much light upon this whole subject of inheritance, as the recognition of a law of propagation, being based upon a perfect standard in nature. Again, there must exist in physiology a certain standard or type of organization for woman, best adapted for increase both for herself and her offspring. This, we believe, consists in a perfectly healthy and well-balanced body, that, with such an organization, the pregnant state harmonizes, the process of delivery is the safest, and the materials for nursing offspring are found most complete.

This theory of human increase derives evidence from an analogous law in the animal and vegetable kingdoms. It is well known that wonderful improvements have been made, within the present

century, in domestic animals, and this chiefly, too, by an application of physiological laws. To such an extent have the results of observation and experiment been here carried that this process of improvement has been reduced almost to a science. The terms here used, "Pure Blood," "Thorough-Bred," "Pedigree," "Breeding in-and-in," and "Cross-Breeding," may all be explained by two great leading principles. One is, a general law of propagation based upon a perfect standard, and the other is, the law of inheritance subject to certain conditions.

In fact, these two laws constitute, we believe, the two great principles that underlie most of the theories of Charles Darwin; these are discussed under the head of "Natural Selection," and the "Law of Variability;" and whatever may be said against his theories of the "Origin of Species," and "Descent of Man," these two general principles are in our opinion founded in nature and will survive all opposition and criticism.

A similar law of propagation exists in vegetable physiology. It is a fact well attested by gardeners, that in order to produce flowers and fruit, the soil must not be too rich or too poor; if the plant or tree grows too luxuriously, its branches or roots must be pruned; while on the other hand, if unthrifty, it must receive better culture and its roots be enriched before it will become fruitful. So the most beautiful flowers and richest fruit have few seeds, which in time run out, while that of a poor quality may abound in seed, but will not flourish long. It is true the conditions here vary, and so do the modes of perpetuating life; but, by analogy, facts and arguments of a positive character may be gleaned from this source to confirm a similar law in human physiology.

Other facts and arguments might be adduced in favor of such a theory of population, did time and space permit, but we close with two or three suggestions. If this law of propagation is true, it presents a great standard for improvement, where there may be found the perfect free agency of man, and, at the same time, the highest motives for improvement. It could not have been intended by the Creator that man should always be ignorant of, or ignore, the great law of propagation, in many respects the most important in the universe; neither could it have been intended that man as a moral and accountable being should be a mere *passive agent* in the propagation of the species.

Again, this law of population should interest medical men, as it affords a new stand-point in physiology to study the relations of the body as a whole and especially in their connection with the reproductive organs, which have constituted the chief study on this subject. It presents also, in some respects, a new guide to female organization as to what is the normal or best standard for the propagation of the species, and it may throw light on the changes

occasioned by pregnancy, as well as on the qualities indispensable for good nursing. It explains in a clearer light than ever not only the laws of hereditary descent, but magnifies their value and importance in relation to human progress and welfare. It opens new views connected with anthropology, and aids in explaining many changes in the history of different races and nations. Inasmuch as it furnishes a new key to the study of the body, and exalts physical laws in their connection with human improvement, it should certainly interest medical men.

From more than thirty years of observation and experience in a busy professional life we have become every year convinced more and more of the truth and importance of the law here so briefly discussed, and would commend it to the attention of all inquirers after truth in this great field of observation and study.

Infantile Diarrhœa. By Ira E. Oatman, M.D. Read before the Sacramento Society for Medical Improvement.

Actuated by the prevailing incentive of this society to diversify its deliberations, and make them practical, I invite your attention to one of the most fruitful themes in medical science. The relative proportional mortality in New York, from *infantile diarrhœa*, will appear by reference to a single statistical observation: Embracing a period of five years, there were 12,293 deaths, or 2,458 per annum; the greater portion, probably, being under five years of age.

The term diarrhœa is used to represent pathological conditions of the alimentary canal, too extensive and varied to be embraced in this paper. Disregarding all nosological arrangement, I propose to treat of those cases occurring from birth to the end of the first dentition, or later, the nature of the case being the same—with due regard to their general and special pathology. The disease occurs chiefly in the hot season; this year, in Sacramento, its greatest prevalence having been in June. The delicate and impressible organism of the infant is much more susceptible to external influences than that of the adult. Whatever lowers its standard of health increases this susceptibility, in the same proportion. Some infants are feeble from birth, and require extra vigilance in regard to exposure and diet. These, and all others, have the susceptibilities of the digestive organs increased by the following agencies: the heat of summer; malarious influence; dampness, and vicissitudes of temperature; loss of sleep, fatigue, or traumatic injuries: also, teething, not *per se*, as usually taught and believed, but the slight fever, or increased nervous irritability,

from the local irritation, lowers the standard of health and increases the susceptibility to the exciting causes. The same condition often results from attacks of the exanthemata, and other general and local diseases. Lastly, in towns and cities especially, noxious exhalations from the decomposition of organic matter, in alleys and back yards, but more abundantly in privies and cesspools. These latter are among the most depressing influences in predisposing to the attack, if, indeed, they are not directly causative.

When the vitality of the delicate organism is impaired by any of the above agencies, or when it is congenitally feeble, the susceptibilities of the alimentary canal are so increased, that causes so slight as often to elude our observation are sufficient to provoke the attack.

Among the exciting causes may be mentioned the child's usual diet in excess, whether the mother's milk, or other milk, or any artificial diet. This is a very common cause. Almost any solid food may excite the attack—especially if acescent, sub-acid, or difficult to digest—as jellies, preserves, fruits, especially if not quite ripe, potatoes not finely mashed, cheese, nuts, vegetables, pickles, etc. The delicate mucous membrane of the bowels will scarcely tolerate any substance except healthy chyme, when the standard of health is in some degree lowered. Hence, the acid generated by fermentation, even of the mother's or other milk, with its undigested casein, frequently becomes an active exciting cause of diarrhœa. It is true, however, of a limited number of vigorous infants, whose digestive powers are not impaired, as above, that a large excess of proper food, or a less quantity of that more indigestible, may excite the bowels to increased action, to free themselves from the offending substance. This irritates the mucous membrane, and increases its susceptibility; and then the ordinary diet, in the usual quantities, is not digested, but acidifies, and is hurried through the bowels unchanged, devoid of the lacteal fluid, and maintains, if indeed it does not increase, that pathological condition upon which the diarrhœa depends. *The general and special pathological conditions* herein described, underlie most cases of *infantile convulsions*, which only require the agency of the exciting causes, to be fully developed.

The alimentary canal is sometimes so gorged with indigestible substances, that it is wholly unable to dispose of them, with all the increased vermicular motion which their presence excites; and they become, without manual assistance, hopelessly impacted in the rectum. I saw two cases, several years ago, both in American township, illustrative of this fact. The two cases were almost identical in all respects, except in regard to the offending substances. The children were both girls, aged about seven years. When I was called to see them, the bowels had not moved for two days—

the pain and tenesmus were frequent and extreme—the abdomen tender, somewhat tumid, and tense; the knees drawn up; the pulse small and rapid; the extremities cool and shrunken—with thirst and great restlessness. Castor oil would not operate, and the pipe of the syringe would only enter an inch or so—the fluid returning as fast as injected. The anus, in both cases, was so sensitive that the children had to be controlled by force, to enable me to examine the rectum. With the index finger, I readily detected the impacted substances, when I proceeded at once, but with difficulty, to remove them. From one rectum there came about half a pint of grape seed, so nearly dry and free from other substances, that they rattled in the tin vessel into which they were received. From the other, about the same quantity of hard, fibrous sour-crout—almost dry—which had been made from cabbage grown in summer on dry land. Under appropriate treatment, both cases recovered.

I need not allude further to the general *pathology* of the diarrhœa of infants. That is sufficiently considered in what I have read. Nor is it necessary to more than mention the special pathology, or pathological anatomy. For you all know that *diarrhœa is only a symptom* of morbid conditions of the alimentary canal, with, generally, some constitutional enervation. In one morbid state, or condition, the diarrhœa is simple—not depending upon inflammation, or, so far as we know, even congestion. The mucous membrane is found natural in appearance, or slightly reddened in some places; and in rare cases the solitary and aggregate glands are slightly enlarged. In other cases, frequently of longer standing, there is more evidence of inflammation. The mucous membrane, chiefly in the lower portion of the ilium and the sigmoid flexure of the colon, is red and thickened; both classes of glands are enlarged and elevated; the mucous membrane, and in chronic cases the solitary glands, are frequently found ulcerated. This constitutes ilio-colitis or inflammatory diarrhœa, and, when attended with pain, tenderness, tumefaction and fever, enteritis. When the inflammation is in the colon and rectum, with tormina, tenesmus, frequent mucous and bloody stools, it is dysentery. Occasionally in Sacramento, but vastly more frequently in the eastern cities of America, and, I believe in Europe, a mild case of diarrhœa will suddenly change into one with large liquid stools, rapidly increasing in frequency, resembling "rice water"—and sometimes in an hour or two becoming limpid and transparent; and usually attended with vomiting and speedy collapse. In this case, there is frequently no pathological change perceptible in the mucous membranes. I need not say that this, in America, is called cholera infantum.

In regard to the prognosis, increased quantity, fluidity, and frequency of the stools are unfavorable, especially if attended with

vomiting and great thirst. Retracted limbs, pain, tumefaction and tenderness of the abdomen, with fever and extreme thirst, indicate inflammation, and are unfavorable. In cholera infantum, clear, liquid stoods, rapid, feeble pulse, intense thirst and sunken orbits, are dangerous symptoms, and if attended with cool, livid surface, and dilated pupils, the case is nearly hopeless. If the child sleep with the eyes half open in all the varieties of the disease, it shows extreme prostration, and is dangerous. If restlessness increase, with constant rolling of the head, with frequent sighing, the cerebral difficulty is paramount, and the recovery need not be expected. This last condition frequently supervenes upon the cessation or abatement of the diarrhœa, and from sympathy with the bowels, through reflex nervous action. It has been considered as metastasis to the brain, but, more probably, is an extension of the disease. The reverse of all these symptoms is favorable.

Treatment. While treating of the etiology and pathology of the disease under consideration, I made no allusion to the liver. Recent and extensive investigations, both clinical and autopsical, by Smith, of N. Y., and other able pathologists, have failed to find any structural lesion, functional torpidity, or hypersecretion of that organ, sustaining a causative relation to diarrhœa, in any of its varieties. Hence, "alterative" treatment, designed to "regulate the hepatic secretion," is not only unphilosophical, but may be positively hurtful. Mercury, for ages, has been chiefly relied upon for this purpose. My belief is about confirmed that mercury does not influence, directly, the secretion of the liver. Then, to use it to correct a secretion which is not at fault, whilst it would have no influence upon that secretion if it were, would be doubly untherapeutical. It has been claimed for it, that it acts as a sedative upon the irritated or inflamed mucous membranes. To have this effect, as claimed, it would require doses large enough to act as a cathartic. Now, it is well known to produce *liquid* stools, if it act on the bowels. To increase the liquid stools, when they are already too frequent, too thin and too copious, would be equally unphilosophical. For fifteen years I have discarded calomel, blue mass, mercury with chalk, and all the other preparations of that substance, as an "alterative," in any of the forms of diarrhœa under consideration. They are, to my mind, not only not indicated, but are absolutely injurious. The same is true of all the other so-called alteratives, which have a laxative action.

In all the forms of diarrhœa, if the stomach and bowels are not free from undigested food, or scybala, a laxative is indicated, and when used early, may be all the medical treatment required. Castor oil acts well, and is safe; being partly digested if it does not operate. But in most cases I prefer one that will neutralize acidity—especially if undigested food is the exciting cause. In

the milder forms, where no laxative is required, or after its operation, bi-carb. of soda, with peppermint in syrup of anise, may be sufficient, to which paregoric may be added, if deemed necessary. Should it not yield in a day or so, sub-nitrate of bismuth, in four or five grain doses, to a child three to twelve months old, with phosphate of lime if there is nausea or vomiting—given after each stool, or every two to four hours, will usually answer the indications. I have not tried the bromide of potassium, as recently recommended, excepting when there were also convulsions.

In the severer forms, with frequent stools, green, dark, more or less liquid, containing undigested food, condensed casein from the milk, and transparent or tough, opaque mucus, etc., attended with restlessness, thirst and fever, there is congestion of the mucous membrane of the ilium and colon, and if of long standing, inflammation, with the raised glands, etc. Here the indications to be met are, to quiet nervous irritability, check the diarrhœa, and abate the fever. The first and second of these indications may be met by the two following prescriptions, premising, always, that the alimentary canal is free from all offending substances:

R. Vinum Opii, - - - - - - gtt. xvj.
Ess. Menth. Pip., - - - - - gtt. xl.
Tinct. Catechu, - - - - - - dr. ij.
Sodæ Bi-Carb., - - - - - - gr. xvj.
Syrup Rhei. Arom., - - - - - dr. iss.
Syrup Anisi, vel. Simplicis, - - - q. s.
M. Ft. Sol. ad., - - - - - - oz. ij.
Sig. A teaspoonful after each stool.

R. Bismuthi Sub-Nit., - - - - dr. iss.
Mucilag. Acaciæ, - - - - oz. ij.
M. Sig. Shake well, and give a teaspoonful every four hours.

These two mixtures may be given as directed, alternating them as to time. But if there be nausea and vomiting, the former may be omitted, and calcis phosph., gr. ij., added to each dose of the other, and given every two or three hours, with sinapism to the epigastrium, until the nausea abates, when the other mixture may be resumed. For the relief of the fever, if considerable, with much tenderness of the bowels, aconite, or veratrum, with ipecac and bi-carbonate soda, may be used. In this last case, sinapisms or turpentine over the abdomen to produce redness, to be followed by simple cataplasms, or flannel cloths wrung from hot water, or hop or other herb tea. If the bowels are known to contain undigested food or scybala, and the stomach will retain no laxative, enemata may be tried. If all else fail to operate, calomel is more apt to be retained, and may act well as *physic*, but not as an *alterative*. I never use it, however, and think my cases are better treated without it.

After the bowels are somewhat checked, and the nausea is

relieved, and the fever reduced to a remission or an intermission, in all malarious or mountain localities it is of the first importance to give quinine in liberal doses, in combination with Dover's powder, or its equivalent in opium and ipecac. To a child one year old, three-fourths of a grain to one grain of each of the two first named, every three or four hours—continuing such other treatment as may be necessary. To conceal the taste of quinine, it may be combined with tannic acid and powdered extract of liquorice, given in powder; or the same in syrup of liquorice extract and anise. Many cases readily curable with the use of quinine, are scarcely curable without it. Its action seems to be, to invigorate the entire capillary system, and thus to sustain the healthy functions of all the organs, thereby preserving, unimpaired to the whole system, the full force and power of the vis medicatrix naturæ, on which we chiefly depend, after all, for the recovery. With this view of the *modus operandi*, its great usefulness may be extended to a large range of cases, in all other countries as well as in the malarious or mountain districts.

In cholera infantum, that the fluids of the blood are exhausted—drained off through the bowels—is evinced by the watery stools, the shrunken livid surface, the choked capillaries and the sunken orbits. To the above treatment vigorously pursued, should be added alcoholic stimulants, ammonia, or compound spirits of ether, or other stimulants, with beef or chicken tea in small quantities and often. If the head be unnaturally warm, cold is indicated. To the extremities dry artificial heat should be applied early, and continued. Ice may be given for the thirst.

In *dysentery*, with tormina, tenesmus, and frequent mucous and bloody stools, the colon and rectum are chiefly affected. To the treatment for the severer forms of diarrhœa, above recommended, may be added opiate and astringent enemata, with speedy relief. The menstruum should not exceed one or two teaspoonfuls, and the injection should be retained, if necessary, by supporting the anus with a napkin. These should be repeated, in severe cases, after each stool, until relieved; or if they be forced out immediately, as is often the case, three or four ounces of a solution of nitrate of silver, in flax seed tea, a grain to the ounce, or less, with laudanum, may be injected as far up the rectum as possible with safety, and allowed to return. This is especially useful in chronic cases. Ipecac, in large doses, is recommended in dysentery.

I have given but a brief outline of the treatment, which, however, is usually successful. It would trespass too much on your valuable time to allude farther to the extended therapeutics useful in these cases. Warm baths, friction, sulphuric acid, creosote, carbolic acid, and other vegetable and mineral astringents, and varied enemata, etc., might be dwelt upon. But the treatment herein recommended can be omitted, added to, or changed, to suit

special indications. I wish to say, however, that my chief reliance is upon alkalies, bismuth in large and often repeated doses, opiates and quinine; with carminatives, stimulants and local applications at discretion.

Admitting the general pathological views herein expressed, it is obvious that rational prophylaxis and hygiene, with proper regimen in health and during the disease, would save more infantile lives than all medication combined. The subject of *regimen*, in this disease, including diet and clothing, is worthy an entire paper. I beg to say, that there is no diet uniformly appropriate. It must be varied in different cases. For young infants, the mother's milk is the best; except when changed by her menstruation, or pregnancy. If that fail on any account, a healthy wet nurse should be procured if possible.

I have often found in the diarrhœa of infants, that a thin proridge of *groats*, or oat flour made with cream and water, sweetened with pure sugar, to which bi-carbornate of soda is added if the stools are green, will seem to save life. In other cases, soda cracker simmered in a new tin vessel until it becomes gelatinous, and sweetened, may be fed to the infant with the happiest results. Where there are nausea and vomiting, no diet has answered so well in my observations, as chicken tea—made from the flesh of the fowl—free from the skin and fat. It should be rich in the elements of the meat, and seasoned to the taste. It is nearly always relished. Beef or mutton tea, is nearly equal in its effects. For valuable formulæ for infantile diet, see Professor Smith's work on diseases of children.

Great attention should be given to the clothing. It is important to keep the body and limbs well protected with flannel. Although my patients are small, the subject of their ailments is large.

"Great men from little babies grow."

—*Pacific Journal.*

What may be Really Learned from Microscopic Examinations of Urine. By James Tyson, M.D., Lecturer on Microscopy and Urinary Chemistry in the University of Pennsylvania.

Few subjects are more imperfectly understood by the mass of general practitioners than that of Urinary Microscopy. Many physicians think that if a specimen of urine is handed to a microscopist for examination, the latter must be able to give such copious and precise information as will unravel all the mysteries of the case, and furnish the key to a speedily successful treatment, or

else the instrument is condemned as an expensive luxury, which, if not useless is scarcely of sufficient utility to justify the outlay necessary to procure it. It is indeed true that in a large proportion of instances the information furnished by a microscopic examination of the urine is limited, and that in a smaller number of cases its results are entirely negative.

It is in consequence of the fact that many instances of unrealized expectations have come under my observation, that I have presumed to occupy a portion of this evening in considering the real advantages which may be looked for in a study of urine with the microscope.

Premising that such a range of power as is obtained by two objectives, an 8-10 and a 1-5 with two eye-pieces, an A and B, or a low medium power—that is from 80 to 400—will most usefully subserve our purposes, we may divide urine which is to be studied microscopically into *albuminous* and *non-albuminous*.

Albuminous Urine.—The urine with regard to which we may expect to derive most information, and in the study of which the microscope is indeed indispensable, is albuminous.

The first question to be determined with regard to albuminous urine is as to whether it contains casts of the uriniferous tubules. This question answered affirmatively, the general affection, Bright's disease, is recognized; the form of cast found to be most prevalent in connection with the quantity of albumen, and especially with the aid of the clinical history, enables us to determine the special form of Bright's disease, whether chronic or acute; and if the former, whether due to the smooth white kidney, the highly fatty organ, or the chronically contracted kidney, and even amyloid disease, with considerable certainty. And thus informed, matters of prognosis and treatment follow, the value of which no one can deny.

On the other hand, it is exceedingly seldom that the microscope enables us to decide the existence of cancerous from that of other destructive diseases of the kidney, as calculous pyelitis, the common purulent products being undistinguishable. Still less are we able to say, by means of the microscope alone, with regard to a limited number of pus or mucous corpuscles, that they are derived from the kidney rather than the bladder; at least, all attempts to this end are too speculative to be admitted to a place among the positive informations furnished by microscopic examination of urine.

Among the causes producing albuminous urine without the presence of casts, is the presence of pus; and although the same corpuscular element attends which is found in mucus, the albumen never accompanies mucus alone, while the distinctive characteristic mucin-threads developed on the addition of acetic acid to mucus furnishes the crucial information. This is apart from the

physical characters of purulent urine, involved in the ready miscibility of the pus with the urine, its rapid subsidence and opacity as distinguished from the difficult miscibility of mucus, its transparency and slow deposition after mixture has been produced. Although albuminous urine, which is due to pressure upon the renal vein by a tumor or pregnant uterus, sometimes contains casts when the obstruction has produced actual congestion, this is comparatively rare, and the comfort which is derived by the practitioner from a knowledge that the albuminous urine of a pregnant woman does not contain casts, which the microscope alone can tell him, is unspeakable.

Urine which contains blood, from whatever source derived, is also albuminous. Except, however, when blood corpuscles are contained in casts of the uriniferous tubules, which indicates their undoubted renal origin, it can scarcely be claimed that the microscope is of much service in determining the exact source of the blood. It is rather the grosser characters, as the presence of coagula when blood is derived from the bladder, and the smoky hue of acid urine containing blood from the kidney, that gives us the desired information.

It is comparatively rare that albuminous urine results from affections of the bladder and prostate, except as the result of hemorrhage in malignant disease of the latter organs. In non-hemorrhagic malignant disease, attended by suppuration and rapid destruction of tissue, the urine may become impregnated with albumen, which will be explained by the presence of pus, and occasionally of fragments of tissue composed of the large multinuclear cell-masses, formerly considered so characteristic of cancer. In these cases, the almost inevitable though not indispensable accompaniment of vesical irritation will point to the bladder rather than the kidneys.

In the limited number of instances in which I have been permitted to examine the urine of patients who, as revealed by a *post-mortem* examination, suffered with cancer of the kidney, although albumen has been invariably present, I have never yet seen the cellular or other elements of cancer—nor, indeed, in cases of cancer of the bladder, though, in the latter, other observers have undoubtedly been more fortunate.

Non-albuminous Urine.— It must be admitted that the purely microscopic study of non-albuminous urine is not attended with so many advantages to the practitioner as that of albuminous. Still, there are numberless instances in which, at least, the clinical history of a case is not complete without a microscopic examination.

In no instance, perhaps, is the inexperienced person more frequently disappointed than in the examination of urine from cases of suspected calculi, both renal and vesical, but particularly the latter. Indeed, it may be laid down that, as a rule, except in uric

acid lithiasis, the microscope alone rarely furnishes much information. To those who have had any experience, it is well known that in cases of phosphatic and oxalic lithiasis, the urine is commonly without any sediment, from the examination of which alone information can follow. With uric acid lithiasis, however, this is not the case, and very generally patients thus suffering have copious deposits of uric acid crystals. In the latter, therefore, we are able to make a positive diagnosis. The difficulty in the case of the phosphates is accounted for by these facts: The extreme solubility of the phosphates, and the dependence of their deposition upon the alkalinity of the urine; and in case of an exciting calculus, its power to excite, by decomposition of the surrounding organic matter, an alkalinity of the urine immediately around it, with consequent deposition of phosphates from such proximate urine, while the reaction of the great body of water continues acid. Occasionally, also, in the case of suspected oxalic calculus, information is derived by examination of urine from the constant presence of octohedral and dumb-bell crystals of oxalate of lime, especially if these be aggregated so as to form microscopic calculi of considerable size, as is often the case. If the symptoms of renal calculus are present, and such crystals be met repeatedly, we have good reason to believe that the calculus is of oxalic composition.—*Southern Medical Record.*

Epidemic Cerebro-Spinal Meningitis. By EDWARD MONTGOMERY, M.D.

This disease, under different names, has prevailed to a considerable extent, both in this country and in Europe, since the beginning of the present century. From the descriptions given by various writers of the fourteenth, fifteenth, sixteenth and seventeenth centuries, it is probable that it visited different parts of the old world, but of this we are somewhat uncertain, because of the absence of a very minute and comprehensive clinical history of the cases, and for the lack of post-mortem examinations. "The first well-authenticated epidemic of the disease in this country occurred in 1806, from which time until 1816 it was constantly epidemic, particularly in the New England States, upon which it seemed to fasten." (*Clymer.*) From 1806 until the present time, partial epidemics and sporadic cases occasionally occurred both in the old and in the new world. In 1845 and 1846 it broke out in Illinois, and was there called "black tongue." In 1847 it prevailed in Mississippi, Tennessee, Missouri and Arkansas, and during our late civil war it occurred occasionally in both armies.

(*Clymer.*) In 1846, a very severe epidemic of it broke out in the city of Dublin, Ireland, where it principally prevailed in the work-houses and hospitals, although there were many fatal cases in healthy parts of the city, and where many fell victims to its virulence whose surroundings were unexceptionable.

Dr. Simon, of London, a very high authority, says, that "soldiers in barracks, the inmates of jails and poor-houses, the inhabitants of crowded, filthy streets, and every place where filth and bad ventilation prevail, are its favorite resorts." But in this country we know that it has devastated little hamlets in the prairies, fastened its unrelenting grasp on the scattered denizens of our newly-settled districts, and prevailed for years together in the healthiest portions of Pennsylvania and Massachusetts. "Notwithstanding its wide geographical distribution, there is no corresponding diffusion amongst any one population during its prevalence, it, as a rule, being limited, during an outbreak, to certain localities, and to certain portions of the population of such localities. The distribution of the disorder seems to be by a series of isolated eruptions, rather than by general spreading." (*Clymer.*)

This is one of its strange peculiarities and anomalies; it will break out in certain neighborhoods, and in certain families in such neighborhoods, without our being able to discover any cause for such predilection. Sometimes it will prostrate a whole family at once, and again carry off one in a large family and the rest all escape; in this respect differing very much from cholera, influenza, or small-pox. Like cholera and influenza it seems to be caused by some toxic principle in the atmosphere, and by it carried to different portions of the world; but unlike those epidemics, it does not appear to spread by contagion or infection; neither will the effluvia, emanations, or excrements of the sick, propagate the disease, as I have abundant evidence of the fact; often have I witnessed the small, close chamber, where a patient was dying, crowded with the neighboring children, and yet none of them becoming infected with the disease. Another peculiarity of the disorder is its varying symptomatology. In 1847, when it prevailed in Missouri, Mississippi, Tennessee and Arkansas, the fauces, throat and respiratory organs were implicated to such an extent that it was called "black tongue," "typhoid pneumonia," etc. In 1846, in Dublin, the cases had nearly all an extensive purpuric eruption, so that Dr. Stokes and others termed it purpuric fever; whilst in other epidemics, in other parts of the world, the type of the disease seemed of a congestive character, and so suddenly fatal, that it was called the "plague," the "*Malum Egyptiacum*," etc. And again, as in the present epidemic in this city, the spine and brain symptoms so predominate that the term cerebro-spinal meningitis seems alone to be appropriate, and to be generally employed. The term "spotted fever" has also been given to it in

different parts of this country, but all these names belong to the same disease, manifesting itself under different types and forms, nearly all exhibiting the same morbid anatomy—a congestion of blood in the expanded vessels of the cerebro-spinal system, with more or less effusion and exudation of serum, semi-organized lymph or pus, and sometimes softening of portions of the brain and cord. It is true that Dr. Woodward, Chief of the U. S. Army Medical Bureau, says that many of the cases reported by different army surgeons, during the war, to his office, presented no signs of inflammation or structural lesion of any kind in the brain, cord, or membranes, and that this exemption from morbid changes in those parts, is not to be accounted for on the supposition that death had occurred too soon for those pathological appearances to be developed, since this freedom from structural change was also observed in cases where death had not ensued suddenly. But, on the whole, it is sufficiently evident from the signs and symptoms during life, and from the post-mortem evidences, that the cerebro-spinal system is the part principally involved, or at least that it is there wherein the disease most forcibly manifests itself. According to Stille, Clymer, Condie, Hirsch, Wunderlich, Neimeyer, Mayne and others, the morbid anatomy of the disease consists in an expansion of the vessels of the cerebro-spinal system, a superabundant quantity of blood in those vessels; this congestion and vascularity is especially seen in the pia mater, and when the patient has died early in the disease; an increased amount of clear, turbid or flocculent serum in the sub-arachnoid space, and in the ventricles; even in cases of the briefest duration there is an exudation of thick, pasty, semi-organized lymph, of a greenish-yellow color, on the base of the brain and medulla oblongata; the membranes at this stage are dry, and sometimes adherent to the brain or to each other. The cerebro-spinal fluid is increased, and portions of both brain and cord are found occasionally softened. When the disease has lasted for some time, the cerebral exudation is soft, opaque and yellowish, two or three lines in thickness, and may be compared to soft butter spread over the brain; or it may be denser, and have a pseudo-membranous look. It is found chiefly along the course of the vessels, and small in quantity, limited to and ramifying with them, or it may be in little irregular patches of variable size scattered over the brain surface, or covering the pons or medulla oblongata or cerebellum or parts of the cerebrum, or it may completely envelop the cerebrum, cerebellum and intracranial cord. Commonly superficial, it may dip down with the pia mater among the convolutions, or be found in the ventricles, or hanging and thickening, with an opaque, greenish pus, the serous fluid of the whole cavity. Purulent infiltration of the choroid plexus, and superficial softening of the walls of the ventricles, have been also observed. (*Clymer.*)

Pus, or purulent lymph, has also been found in the spinal canal, as well as in the base of the brain, in cases which have been somewhat tedious in their course. In nearly all the cases the expanded cerebro-spinal vessels have been found full of this black colored blood, and in some cases, fibrinous clots have been found in the heart after death. (*Stille.*)

As before intimated, this disease presents different forms or types in different epidemics, in different countries and even in the severe epidemic, and among the same class of patients. In some cases it is ushered in without any appreciable premonitory symptoms whatever, the patient being suddenly stricken down as by some fell poison, becomes delirious, tosses about for a few hours, tries to vomit every few minutes, with sighing and slow respiration, the skin dusky, the eyes suffused and sunken, and death by coma in ten to twenty-four hours. Occasionally these fulminant, blasting, or siderant cases, as they are variously termed, are accompanied with profuse diarrhœa, vomiting, and convulsions.

The tetanic form of the disease is more tedious in its progress, and of course more amenable to treatment; it is generally ushered in with chilliness, nausea, headache, frequently a general hyperæsthesia, or pains in some or all of the joints, sometimes sore throat, with pains in the ears; although there is some thirst, and the mouth is dry, but sparing drinks will be indulged in, the patient soon becomes much worse, there will be great jactitation, the cephalalgia will become more intense, the eyes will become suffused and injected, the face flushed, the head drawn back, the pulse quick, the bodily temperature from 100° to 103° F.; a trembling of the extremities when the patient is moved, intolerance of light, pupils contracted at first, but when exudation has taken place the pupils may be dilated or irregular, and the pulse or temperature may be abnormally reduced. In some of the cases an erythematous, eczematous, or purpuric, a morbillous or herpetic eruption may appear; but an eruption of any kind is not present in one-third of the cases, hence the misnomer of spotted or purpuric fever. There is often great deafness, apathy, and in all cases early prostration. When the case is severe the patient is terribly racked with the cephalalgia and pain in the throat and upper part of the spine from the tetanic contractions; but a few minutes' rest at a time can be indulged in, the patient suddenly waking up with piercing cries or low moans, and talkative delirium, or convulsions, or complete coma, may close the terrible sufferings. In tedious cases partial paralysis sometimes occurs, and the deafness occasionally remains permanent. Sometimes, also, vision is permanently impaired, and strabismus may result from the attack.

Dr. Kempf, in writing about a severe epidemic of this disease which occurred in the spring of 1863, in Dubois, Spencer and Perry counties, Illinois, describes three forms, which he names

respectively, cerebro-spinal asphyxia, cerebro-spinal inflammation, and cerebro-spinal irritation; the first variety, he says, carried off the patients in many instances in a few hours, and no treatment seemed to have any effect. These fulminant cases were ushered in with chills, vomiting, diarrhœa, violent headache, soon followed by lethargy and extreme prostration, complete apathy, stupor as if profoundly intoxicated, the eyes suffused and injected, the skin covered with dark crimson or purple spots, coma and death. The inflammatory, or tetanic form, was also ushered in with chilliness, vomiting, headache, suffused countenance, injected eyes, apathy and debility. In a short time the head was retracted, the throat and neck painful, the petechial or purpuric spots appeared, and if not cured, delirium, convulsions, or coma, closed the scene. For these cases the treatment was bleeding, purging, plenty of calomel, veratrum viride, quinine, camphor, and opium. The doctor says he thinks bleeding and counter-irritation do harm, but the other remedies he employed seemed to save some cases. For the third variety—the cerebro-spinal irritation—morphine and quinine were all that were necessary to insure convalescence. Dr. McVey, of Morgan county, Illinois, reports his treatment for the disease as it appeared in 1863 and 1864 in that section of the State: it consisted in a moderate use of aperients and alteratives, friction to the spine and extremities, large doses of opium, four or five grains of opium with six or eight drops of Fowler's Arsenical Solution every four hours, blisters to the back of the neck, and if the cases were prolonged he also gave strychnine. He says this treatment proved rather successful, but we apprehend very few physicians would venture on such a free use of opium in this disease. Dr. Brown, in the same region of country, also reports his meeting with much success from similar treatment. (*Transactions of Illinois Medical Society.*) Dr. Liddell reports some cases treated by him in the Washington City Hospital, in 1864, in which his favorite remedy was opium, and he attempts to account for the beneficent action of this drug on the ground that it has the effect of preventing effusion from serous membranes. In one of Dr. Liddell's reported cases the patient was seized with the disease whilst taking quinine for an attack of ague, from which he was convalescing. This does not speak well for the remedial virtues of quinine in cerebro-spinal meningitis.

In the April number of the *American Journal of the Medical Sciences* for the year 1864, there is an article by Dr. Burns, on this disease as it occurred in the vicinity of Philadelphia, in which he advocates leeches, venesection, frictions, blisters, purgatives and quinine. He reports the particulars of some very alarming cases which almost miraculously recovered under this antiphlogistic treatment. If we examine the pages of the *Medical Press and Circular* of Dublin for 1867, we will find many cases exact counter-

parts of those of Dr. Burns which died under a stimulating treatment. Dr. Black, of Newark, Ohio, in the same journal, takes the opposite ground, and protests against antiphlogistics in all cases, and affirms his belief in the efficacy of tonics only. Indeed, in looking over the medical journals for 1863, '64, '65 and '66, although epidemics prevailing in different sections of the country during those years are presented to us with great uniformity of description, the same vivid picture of the malady being almost exactly reproduced in every instance, there is much contradiction and discrepancy with regard to the treatment.

Professor Wunderlich describes the disease as it appeared in Germany in 1863; its symptomatology and morbid anatomy as given by him is a counterpart of that delineated by numerous observers in this country. His treatment consisted in local depletion in sthenic cases, ice to the head, but not to the spine as there he observed it did more harm than good. Morphine, he says, allayed the pain in one case and it finally recovered, but chloroform inhalations and as a liniment was also used in the same case. Iodide of potassium was given in three cases which terminated in cure; he therefore recommends it, especially in protracted cases. He says there was no evidence of the disease being contagious or infectious.

Dr. Condie, in his report of the diseases of Philadelphia county for the year 1864, in the transactions of the Pennsylvania State Medical Association, treating of this malady, says that for the algid form he had tried alcoholic and diffusible stimulants with quinine, and externally used liniments, sinapisms, frictions, blisters, hot baths, etc., but without being convinced of their having the least good effect on the disease. For the tetanic form he chiefly relied on opium and quinine internally, and on frictions, liniments, blisters and dry cups along the spine, especially to the upper portion. An infusion of half an ounce each of cimicifuga, wild cherry bark, serpentaria and sassafras bark in a quart of boiling water; a wine-glass of this infusion every three hours seemed also to do much good.

Dr. Githens, in his report of the cases treated by him in 1866 and 1867, in the Philadelphia Hospital, says that his principal measures consisted in ice to head, blisters to nuchæ, veratrum viride, carbonate or muriate of ammonia, spirits of nitre, stimulants and nutrients. He was in the habit of giving thirty-six ounces of whisky, and the same amount of beef tea in the twenty-four hours. In one or two cases out of the ninety-five treated he prescribed the *secale cornutum*.

In the *Medical Press and Circular* for June, 1867, we find the disease described as it occurred in Ireland; the treatment there generally adopted was brandy, beef tea, carbonate of ammonia, musk, ether, belladonna, turpentine, and in a few cases quinine and

iron. From the reports of the cases this highly restorative treatment proved very unsuccessful. On the other hand, the French physicians bled their patients and had far greater success. Niemeyer, in his monograph on the disease, was also in favor of abstracting blood, and giving calomel freely: the latter, to say the least, is of doubtful efficacy except as a purgative.

In our city, in 1863 and '64, Dr. Ira Russell reported a number of cases in the *St. Louis Medical Journal* which occurred amongst the soldiers at Benton Barracks. About fifty cases had occurred at the time of his report, one-half of whom had died. The treatment was, during the period of collapse, alcoholic stimulants, capsicum and quinine, mustard emetics, and sinapisms to the surface. Opium seemed to exert a happy influence in controlling the delirium. After the reaction pillula hydrarg. and salines have been followed by good results, but as a general rule antiphlogistic treatment has been poorly borne. Cups to spine, iodide potassium and tonics, are the best remedies in the advanced periods of the disease. It is curious to observe how very seldom the *secale cornutum* or the iodide of potassium was prescribed in former times, although these seem now to be the favorite remedies with many practitioners. From the numerous reports of cases which I have examined I have been also surprised at the great differences of opinion with regard to the use of quinine and blood letting. Some believe that quinine is the main remedy, whilst others affirm that it never has a curative action, but often inflicts great injury, but I believe these discrepancies can all be reconciled when we reflect on the different types of the disease in different epidemics and in different localities. With regard to cupping, leeching and purgatives, the same contrariety of opinion prevails, and may be explained in the same manner, for antiphlogistics will be salutary or pernicious according to the form and type of the disease, and the constitutional stamina of the patients. As before intimated, there is a great uniformity in the different reports I have examined as to the signs, symptoms, course of the disease and its morbid anatomy. One fact stands out prominently in all the reports of the symptoms, and that is, the sudden apparent prostration of the patient; I say *apparent* prostration, for I contend that this symptom here is the result of the poisoned condition of the blood, its engorgement in the vessels of the cerebro-spinal system, and the resulting functional disorders of respiration, digestion, sanguification, etc. The great prostration so early existing in this disease is entirely different, especially as an indication of treatment, from the prostration resulting from loss of blood, from any wasting evacuation, or from prolonged bad health. In this disease the general debility is, in part, caused by a redundancy of certain matters in the blood, and by an engorgement or congestion of that diseased blood in the vessels of the cerebro-spinal system, whereby the

nerves supplying the organs of respiration, circulation, digestion, etc., are seriously involved; whereas the debility existing from loss of blood, from profluvia, from long continued bad health, etc., results from want of nutritive elements and from a wasting of the tissues. Another fact which stands prominent in this disease and which is noted by all observers, is the expanded condition of the blood vessels of the cerebro-spinal system, and their engorgement with abnormally fluid, dark colored blood. Very often this is the only morbid condition found on post-mortem examination, although in most cases there is a superabundant exudation, sometimes fluid like pure serum, sometimes containing flocculi, and sometimes a semi-organized plastic material like butter, and again purulent lymph or pure pus. Now taking these prominent facts into consideration, the indications of treatment seem to be to endeavor to prevent that stasis or local engorgement if it has not already taken place, or to remove it if it has; to prevent exudation, or obviate and resist its evil results if it already exists; to restore the blood to its normal healthy condition; and to assist the natural vital processes so as to enable the system to bear up under the deteriorating influences of the malady. In those cases resembling pernicious intermittent or congestive fever, the algid cases of Dr. Condie, hot water baths containing salt and mustard, frictions with tincture of capsicum and camphor, and the internal use of sulphocarbolate of sodium, sulphurous acid, sulphite of soda, permanganate and chlorate of potash, applying any of these which seems to agree best with the patient. These antiseptic remedies should correct the toxæmia existing, and with that view should be given freely and frequently, and in a chemically pure form. Small quantities should be prepared each day, so that they would be always fresh and unchanged. As soon as they can be administered with any prospect of happy action, iodide of potassium and the fluid extract of ergot should be given, the former to promote the absorption of the exudation, and the latter to constringe the expanded blood vessels. Quinine and a small quantity of opium will also do much good in these algid cases; the former will greatly assist the antitoxæmic remedies, and the latter will prove beneficial in the first stage of the disease from its power in preventing exudation. Of course nutrients will be necessary, but they should be of a fluid form, such as beef essence, rich milk, cream, soft boiled eggs, etc., etc. The great difficulty in this form of the disease, is that the whole system is so completely overwhelmed by the toxic power of the malady, that no remedy has the time or the power to act, death occurring so suddenly, or the processes of organic life so completely in abeyance, that no effect is produced.

In the tetanic form of the disease, those cases which seem to be of a more inflammatory nature, besides the hot bath, in the first stage, cups or leeches to the nuchæ and down the spine, or behind

the ears, will be of decided advantage. The form of purgative I have thought best, has been calomel and jalap, some prefer calomel and colocynth, or calomel and aloes, from the belief that the colocynth and aloes have the effect of acting on the lower intestines and as derivatives from the brain. As there is often great nausea, and consequently purgatives administered by the mouth may not be retained, in such conditions enemata of oil and turpentine, or decoction of aloes, may be given. As soon as the bowels are evacuated, the antiseptics should be freely given, and alternating with them the fluid extract of ergot, to resist the expansion and engorgement of the blood vessels. The tincture or fluid extract of the calabar bean has been recommended for the same purpose, but of that I have had no experience. I would rely on the cups and leeches, the purgatives, and the ergot of rye, to prevent the effusion of these tetanic or inflammatory cases, as I have witnessed severe coma to ensue after the use of opiates, but whether *propter hoc* or merely *post hoc*, may be a question to be decided in the future. Instead of the cups or leeches and purgatives in these cases, some recommend the veratrum viride, but from what I have experienced in my own cases, and from what I have read of the results of the treatment by others, I believe this powerful arterial sedative is contra-indicated in this disease. Gelseminum and digitalis have also been highly recommended by some, but I have had no experience with them in this affection. Quinine combined with opium in the very beginning of the disease, and without the opium in the commencement of convalescence, will be found a valuable remedy, but after the effusion has taken place, and as long as we have evidence of the existence of extensive exudation, this alkaloid may prove a dangerous medicine. In the very commencement of the attack opium may do good in preventing effusion, but in all other periods of the disease it is a perilous appliance. The great hyperæsthesia, cephalalgia and mental disturbance will be more safely remedied by venesection, leeches or cups, purgatives, free doses of the bromide of potassium, warm baths, and frictions with a liniment composed of chloroform and tinctures of opium, aconite root, capsicum and camphor. After exudation has taken place, the iodide of potassium will be found of essential service. I have witnessed numerous cases with slow intermittent pulse, deafness, slow breathing, irregular pupils, apathy and stupor, and in some partial paralysis, which happily recovered under the use of the iodide. Of course in these cases it would be well also to blister the nape of the neck, or over the mastoids.

In young children the bromide is often substituted for the iodide of potassium; in these young patients I am very decidedly opposed to opiates in any form of the disease, as coma will assuredly soon follow their administration. As before remarked, fluid nutrients

should be frequently administered, and good ventilation and the best possible hygienic and sanitary measures should be sedulously carried out wherever this fearful scourge prevails.

I have cited the treatment adopted by different physicians in different epidemics, occurring in different countries, and from the comparative clinical statistics deducable from them, I am convinced that an opium treatment, a quinine treatment, or a stimulant and highly restorative treatment, are all incompatible with the true pathology of the disease. That an extreme antiphlogistic treatment would also be pernicious, I have not the least doubt; and I also feel convinced that veratrum viride, aconite, gelseminum and calabar bean, are hazardous remedies in this protean disease. If opium is to be used at all it should be in the very commencement of the attack; for the only reason that I can discover for its employment is its reputed powers of preventing serous exudation; and if it is given after the exudation has occurred, it will likely imperil the life of the patient, by encouraging the full development of the comatose condition. In a disease characterized as this is, by a congestion or engorgement of the blood vessels of the cerebro-spinal system, I cannot see the rationale of administering quinine, unless in cases complicated with malaria and intermittent in their character, or as a tonic in convalescence, when the congestion and exudation are both removed. If we carefully examine the results of a stimulating and restorative treatment, as detailed of the different epidemics in Massachusetts, in Pennsylvania, in Ohio, in Illinois, in Missouri, and in Ireland, we will be horrified at the great mortality. In these different places we can see the detailed reports of numerous cases of the tetanic form of the disease where the patient lived long enough to permit the action of medicine to take place, and yet the cases nearly all died under quinine, opium and stimulants. From sixty to seventy-five per cent. died in these epidemics, whereas the rational and scientific treatment now adopted—this treatment which is founded on a just recognition of the pathology and morbid anatomy of the disease—will save at least seventy per cent. of the cases.

To epitomize what we consider a rational and scientific treatment, we would say, that in the fulminant, siderant or blasting cases, and in those cases which run a rapid course, accompanied by purpuric eruptions, in other words, the variety which has been variously named cold plague, malum Egyptiacum, black tongue, etc., and the form denominated spotted fever or purpuric fever, putrid fever, etc., we would use hot salt and mustard baths, chlorate or permanganate of potash, sulphurous acid, sulph. carbolate of sodium, bisulphite of soda, etc., and afterwards quinine and phosphoric acid. Chemical physicians have quite recently suggested the cautious trial of the carbazotate of ammonia in these algid forms of the disease, giving one-fourth of a grain, in the form of a small pill, every four

hours. In the tetanic form of the disease, we would rely on sinapisms, hot baths, leeches, cups, or venesections, ice to the head, frictions, free purgation, followed by opium, or opium and quinine in the commencement of the attack, the bromide and iodide of potassium, and the fluid extract of ergot; the bromide and ergot to be given before the exudation, and the iodide afterwards. Quinine we would use, in all cases complicated with malaria, in the beginning of the disease, or as a tonic to assist in promoting a favorable convalescence after the exudation has been removed. To essay the mitigation of toxæmia, some of the antiseptic remedies alluded to may be advantageously administered during the early periods of the malady. Of course, the best possible sanitary and hygienic measures should be enforced, and the patient should be supported by fluid nutrients, and tonic medicines judiciously administered after the inflammatory symptoms have abated.—*St. Louis Medical and Surgical Journal.*

Gelseminum as an Antiperiodic. By WILLIAM W. MURRAY, M.D., Professor of Materia Medica and Therapeutics in the College of Physicians and Surgeons, Baltimore.

Since the accidental discovery of the febrifuge virtues of gelseminum, its use in febrile and inflammatory diseases has been known to the profession. From some it has received the highest encomiums as an antiphlogistic and febrifuge; by others it is but little esteemed. While I am among those who think well of this drug in its power of reducing the inordinate action of the heart in inflammatory affections, it is not the object of this paper to discuss its virtues in diseases of that kind, but I desire to call the attention of the profession to its antiperiodic powers.

I have not had access to all the articles which have been written on the medicinal properties and uses of gelseminum, but so far as I am aware, its antiperiodic effects were first made public by Dr. E. A. Anderson, of Wilmington, N. C., in an article which appeared in "Tilden's *Journal of Materia Medica*," of 1870, either the October or November number. I need not refer to Dr. Anderson's paper, or to a private communication from him on the subject, further than to say that by the strength of his assertions that gelseminum will radically cure malarial fevers, I was induced to make use of it in those affections, in order to satisfy myself whether it was entitled to rank as an antiperiodic. While the cases in which I have employed it are not very numerous, the results were of such a character as to convince me, at least, that it is not only equal to quinia in breaking in upon the chain of morbid phenomena

which characterize intermittent fever, but that it is infinitely superior to that article in curing the disease. It is tasteless and cheap, both of which are additional advantages which it possesses over quinia.

On May 14th, 1872, I was called to see Mrs. B., who was laboring under an attack of intermittent fever, of the tertian form. I determined to put her on gelseminum, especially as she was pregnant, in which condition quinia is considered by some physicians somewhat dangerous. Accordingly after opening the bowels and appealing to the liver, I prescribed the tincture of yellow jessamine in five-minim doses every hour until it produced heaviness of the eyelids, dilated pupils, or double vision; the same course to be pursued for four or five days successively. She has had no return of the disease in any form since, although she passed through the entire miasmatic season in the same locality.

The next case of intermittent fever which fell to my care was that of Mrs. P., on the 24th of May. She had suffered frequently from this affection, and she implored me not to give her quinia, as it affected her very distressingly. She seemed as much surprised as delighted when I informed her that I had no intention of giving the much dreaded medicine. I ordered tinct. gelsemini, in the same doses and with the same directions as in the preceding case. She has had no chill since then to the present, January 3rd, 1873.

On 5th July, 1872, I was called to see a little boy, whom I found laboring under an attack of remittent fever. Gelseminum was ordered for him, and on the third day my visits ceased, the disease having entirely yielded.

On the 14th of July I visited Miss P., who had remittent fever. As the case presented some pretty severe symptoms, and not wishing to risk anything (knowing that the quinia treatment, if properly managed, was indorsed by experience), I urged quinia, which she consented to take after a great deal of persuasion (she had taken it before in a similar attack, and, as she said, "it nearly set her crazy"), but she had swallowed only a few grains, when it affected her so unpleasantly that she could not be induced to take any more. I then ordered gelseminum, which cured her. The disease, in this case, did not yield so readily as in that of the little boy referred to, for two reasons: 1st, it was a much more severe attack; and 2nd, she would not continue the medicine faithfully, according to directions, but as soon as she began to feel better under its use, she would cease taking it. As regarded the antiperiodic treatment, it was the only drug used, and she made an excellent recovery.

The last case which I will mention is that of Miss C., who had tertian ague. Quinia had always arrested the paroxysms, but only temporarily. I gave her blue pill and compound ext. colocynth,

each gr. vj., and then put her on the yellow jessamine. This was about four months ago, since which time she has had no return of the affection.

I may remark that in the use of the gelseminum, I am governed by the effect produced, whether the quantity required to produce that effect be small or great. I give it generally in five-minim doses, and I think this the safest plan, because the effects can be regulated exactly; whereas, if large doses be given, we may have an overwhelming effect produced at once, which would be at least alarming, and possibly dangerous.

I have been induced to narrate these cases, in the hope that some of the readers of the *Reporter* will test for themselves the antiperiodic virtues of gelseminum, and record the results of their experience for the benefit of the profession at large.—*Medical and Surgical Reporter.*

On Acute Articular Rheumatism. A lecture delivered at Bellevue Hospital, by Austin Flint, M.D., Professor of Practical Medicine, etc. (Reported phonographically for the Record).

Gentlemen:—My remarks to-day will be upon the subject of acute articular rheumatism, and they will be based upon the history of this man's case who is now before us. His name is P., æt. 22, Norwegian, and by occupation a blacksmith. To-day is the tenth day of his disease. I may here remark, that this disease, especially in its acute form, is not very frequently seen in this hospital. The present case does not show the disease in its acute form, for the patient is apparently approaching convalescence, yet it will serve to illustrate some of the important points pertaining to this disease. The word rheumatism is a term which has been used with a good deal of latitude, and under this name several different affections have been taken in, such as certain neuralgic troubles, certain affections of the muscles, and certain affections of the joints. When, however, we use the term articular rheumatism, we refer to a very distinct and clearly defined affection. It is a constitutional affection, characterized by local manifestations, consisting in an inflammation generally affecting several joints of the body, and not infrequently fibrous structures elsewhere than in the joints. It is an affection which usually attacks the greater part of the joints of the body, and these articular affections are but the local manifestations of the constitutional disease. These local affections are in certain points distinguishable from ordinary inflammation of analogous structures. We have no suppuration, none of the inflammatory products, no production of new tissue, which we might expect in ordinary inflammation, and these are essential points of difference

which characterize these local manifestations of articular rheumatism. Another point which is very striking is, the inflammatory condition frequently subsides and disappears in a very short time; one day it is present, and the next day perhaps it may be entirely gone. The occurrence of these local manifestations in different joints successively is also a striking feature of the disease, as one joint may be affected to-day, and another to-morrow. Another feature which goes to show its constitutional character, and establish what has been said with regard to the local manifestations, is, the joints are affected symmetrically. The law of parallelism is strikingly illustrated in this disease; corresponding joints on both sides of the body are affected, and it is seldom that the strict law of symmetry is violated. If the joints upon both sides of the body are not affected, it does not violate the law, but it is simply the fact that the law is not illustrated. If corresponding joints are not affected, analogous ones are affected, such as the wrist and ankle perhaps, but an affection of the wrist and knee joint upon different sides of the body is rarely seen. This man is 22 years of age, which illustrates the fact that rheumatism, primarily, affects young subjects. A person, however, who has had the disease in early life, will be subject to repetitions of attacks ever afterwards, thus showing a constitutional tendency. Acute articular rheumatism also belongs among those diseases which are inherited, or rather, to which a predisposition may be transmitted. This man has generally had good health, and this is the first attack of the disease he has ever had. He was attacked in the day-time. It is more frequently the case that the patient is attacked in the night-time. The disease generally attacks suddenly, yet in a certain number of cases, the acute attack is preceded by more or less soreness and tenderness about the joints. As we look at the history of this case, we see that for two or three weeks this man had felt soreness in the joints, but not sufficient to prevent him from continuing in his occupation. The first manifestations which he had were in the smaller joints of the hands and feet; the carpal and metacarpal and tarsal and metatarsal joints. It first appeared in the right hand, then in the left foot; then in both knee-joints; then in both wrists; then in both shoulder-joints; and then in both hip-joints. The law of parallelism, it will be seen, was very well illustrated. At the present time the joints are comparatively but little affected. I deem it hardly necessary to dwell at any length upon the local symptoms, such as the pain and swelling which accompany the local manifestations; and will dismiss them with the simple remark, that we do not usually have much swelling and erythematous flush about the larger joints, such as the hips and shoulders. I must now ask you to mark the statement which I am about to make, as it is of special importance in connection with the topic I shall presently mention. The statement is this: this man has had no pain at any time on the chest,

no præcordial pain at any time during the course of the disease. I will soon speak more particularly of the importance of this statement in the history of his case. This is a disease which in its acute form—for it is presented to us both as an acute and subacute affection—is characterized by a good deal of febrile movement pertaining to the disease itself, and also symptomatic. One of the popular names for this form of fever is "rheumatic fever," and it is not altogether improper, for the fever does not depend upon the local affection entirely, but it is sometimes altogether out of proportion to the local affection. We have, therefore, a fever which is partly essential and partly symptomatic. Last evening this man's pulse had fallen to 72 and the temperature in the axilla was 100¼. This affords a good illustration of the disparity which is sometimes seen between the pulse and temperature, as regards the criteria of a fever. When such a disparity is present, the temperature is entitled to the preference in deciding the question of fever or no fever.

This morning the pulse was 68. It is always to be borne in mind, that, in many diseases, about the time of convalescence, the patients have a pulse which is below the average frequency in the same persons in health. This is the case in typhoid and typhus fever, pneumonia, and some other affections. This morning there is no fever present, the temperature being 98¼.

This man has been taking quinine and nitro-muriatic acid. It might, at first, strike the mind as an incongruity in the treatment of this disease to administer an acid, while the predominant feature of the disease is the presence already of an acid in the system, but really there is no incongruity in it. Over and over again we apply remedies and measures which are directly antagonistical, and each will meet its own indication, and often the only proper method of treating certain cases is to meet the indications.

We come now to speak of one of the important events which is liable to occur in the course of inflammatory rheumatism. This disease in itself, as far as the constitutional difficulty is concerned, is not dangerous to life; but there is a danger in connection with certain incidental events, and those events which are most likely to occur relate to the heart. There is a special liability to an inflammation affecting one or both serous investments of this organ, and these are the untoward events to be looked after in cases of articular rheumatism. The importance of the disease and the permanent welfare relate chiefly to the occurrence of these complications. There are some other complications which are so infrequent that they do not give us much care, and we will pass their consideration. The cardiac affections are the prominent ones. Endocarditis occurs in quite a proportion of cases, but I do not give you the figures, because I think there has been some looseness and error in making up statistics upon this point. The reason for this

I will soon mention. Pericarditis is of much less frequent occurrence than endocarditis, and it may be said further with regard to these complications, that if we have pericarditis we have endocarditis, but the rule does not hold in the opposite direction. Pericarditis involves a certain amount of immediate danger, though a great proportion of cases get well. What we probably have in this case is endocarditis, and first of all we will study the evidence upon which this probability is based. The evidence in this case is not absolute, but it is *probable*. Now you will recollect the fact to which I called your special attention a few moments ago, viz., this patient has not had præcordial pain, or any chest symptoms whatever, during the progress of his case. The diagnosis of endocarditis is therefore based entirely upon physical evidence. This is the reason why endocarditis is a disease which has been discovered within the last half century, and was never before known. It was discovered by physical exploration, and must continue to be recognized by this means, because it occurs without any subjective symptoms. It is associated probably with some increase of the circulation, but as this increase goes more or less with the rheumatism, we cannot draw the inference from this that endocarditis is present. How are we to determine whether a patient has endocarditis or not, who is suffering with articular rheumatism? We are to reach a positive diagnosis in this way: if the patient be under your observation, and you can determine by auscultation that there is no mitral systolic murmur present at the commencement of the attack, and then in the course of the disease a mitral systolic murmur is developed, you know that the patient has endocarditis. It all depends upon the development of this mitral systolic murmur, and the murmur is the hinging point. This patient has a mitral systolic murmur, but the diagnosis is not positive, because the patient had the same murmur when he came into the hospital, and we do not know certainly that the murmur has been developed since the commencement of the disease. It has probably been developed in this patient since the commencement of this attack, for it is the first attack the patient has had of the rheumatism; he has always been well, and as the murmur is one which does not indicate regurgitation, it is altogether probable that in this case it is evidence of endocarditis. I find here that the apex of the heart is beating in the fourth intercostal space, as it not infrequently does when the body is in a recumbent position. By percussion I determine that the heart is not enlarged. This would not be the case if the patient had had mitral disease for any length of time previous to the present attack, for he would have more or less enlargement of the heart.

Within a certain circumscribed space about the apex of the heart, I get a murmur with the first sound of the heart, a mitral systolic murmur, and it is not propagated much beyond this quite limited

area. It is not proper to call this murmur a mitral regurgitant murmur, because there is no evidence of regurgitation.

What do we look for as physical evidence to show that there is regurgitation? The fact that a mitral murmur is present, is not limited to the apex, is tolerably loud, and is propagated to the left, would be evidence that it was one of regurgitation.

I also get a murmur at the base of the heart, but I attach no special importance to this, because we cannot attach much importance to a murmur at the base of the heart in a case of articular rheumatism. It is very frequently present, and is dependent upon the condition of the blood. It is always present in females, or at least I believe I have never seen a case of articular rheumatism in a female where this murmur was not present. It is just here, I apprehend, that great confusion has arisen with regard to statistics in reference to endocarditis, and many cases have been called endocarditis in which the disease did not exist. I would not make my diagnosis relying upon this murmur at the base, unless I had the mitral systolic murmur at the same time.

Endocarditis is a serious complication, because in it the rheumatism has laid the foundation for the subsequent occurrence of valvular lesions.

We have attenuation of the valves, thickening and calcification of the valves and other valvular lesions, all arising from an endocarditis in connection with rheumatism, and we have not much knowledge of endocarditis except in connection with these cases of articular rheumatism. We come now to ask the question, what are the indications in the treatment of acute articular rheumatism? In the first place we would like to cut it completely short if possible, but we cannot do this often, if ever. Next, we would like to abridge its duration, and there is reason to believe that this may be done to a certain extent. The great object, however, is to prevent these cardiac complications, pericarditis and endocarditis, for if a patient passes through this disease and escapes these complications, he is exceedingly fortunate.

Just here, however, a knowledge of the natural history of the disease, based upon the observation of cases which have been permitted to run their course without the influence of therapeutical interference, is of service in making up our estimate of the value of treatment. In the year 1862, I conceived a plan of observing cases of articular rheumatism, without the use of medicine. The reason for so doing was because almost all the cases reported as having been under the influence of any special plan of treatment, such as mercurialization, colchicum, bleeding, blistering, etc., were reported as cured, and hence each plan of treatment was reported as being attended with the greatest success. I therefore reasoned that the probability was, inasmuch as all the different modes of treatment tended to success, that the disease itself tended

towards getting well. I accordingly treated 13 cases in this hospital, and they got no remedy at all, except one which was intended for a moral effect upon the patients, and that, for the sake of giving it a name, was called the placeboic remedy. The only treatment which these patients received, aside from this placeboic remedy, was a little anodyne and local applications to the joints of a palliative character. I resolved to continue the plan of treatment until something occurred to render it improper to continue it longer, and in only one of the 13 cases treated after this method did any complication occur, and that patient had the complication when she came into the hospital. The average duration of the disease in those cases was 26 days, and no important complications took place. I reported these cases in an article entitled "A contribution toward the Natural History of Articular Rheumatism," which was published in the *American Journal of the Medical Sciences*, July, 1863. I hope I shall not be thought egotistical in referring to these observations. They were made in this hospital, and my object in making them was stated to the class then in attendance. So far as I know, a series of similar observations had never before been made. I am led to assert my claim to whatever credit may belong to precedence in this line of investigation, because shortly after my observations a similar plan for the same object was pursued by others. Guy's Hospital Reports, volume for 1865, contains a report of a considerable number of cases treated by Dr. Gull, chiefly with mint water; and another report of additional cases was made in an article by Dr. Gull and Dr. Sutton, contained in the "Transactions of the Royal Medical and Chirurgical Society of London," in 1869. I should not thus expose myself to the charge of egotism in asserting my claim to priority in the study of the natural history of articular rheumatism, had these observers made any reference to my article in the *American Journal of the Medical Sciences*. I feel bound to make this claim, not alone for myself, but for this hospital and for American clinical medicine.

Dr. Fuller, who is the author of the so-called "Alkaline treatment," states that cardiac complications will not arise after the alkalescence of the urine is once established, but I think this author is too ardent in his statements, for I have seen cases in which endocarditis has been developed while the patients were fully under the effect of the alkaline treatment. Statistics, however, show that there is a diminished *liability* to these complications, and therefore we are not warranted in repeating observations without remedies. The method of treatment to be pursued in a case of acute articular rheumatism, is the adoption of what is called the alkaline treatment. The prime object in this treatment is, to produce alkalinity of the urine, regarding that as the criterion that the system is sufficiently affected in as short time as possible, for we cannot tell at what instant the complications may appear.

To accomplish this, the bi-carbonate of soda or potassa may be given in half-drachm or drachm doses every two hours, and by these doses you can render the urine alkaline within twenty-four hours at the farthest, with a good deal of certainty. After the urine has been rendered alkaline, the remedy is to be continued in varying doses sufficient to maintain the urine in an alkaline condition during the continuance of the disease. In this case before us, the disease has continued only ten days, and the patient is apparently convalescent.

Quinia in full doses also forms a good adjuvant in the treatment, as the patient is becoming convalescent. It contributes very much to the welfare of the patient. The joints are to be treated by palliating applications. Frequently you will find that shampooing the joints, be they never so tender, is very beneficial, commencing with gentle frictions, and gradually increasing the force as the patient can bear. Fomentations which contain alkalies and anodynes may be used also as local applications. As a rule, it is one of the great objects of medical treatment to relieve pain, for pain interferes with sleep and wears out the vital forces of the patient. Those patients afflicted with articular rheumatism may have opium sufficient to allay all irritation from pain, and give them quiet and rest. A more minute detail of the pathology of this disease must be considered at another time.

NOTE.—At a subsequent clinical lecture, Dr. Flint presented a case of acute articular rheumatism during the course of which peri-endocarditis (developed when the urine was alkaline), chorea, and right hemiplegia from embolism occurred. Coincident with the occurrence of the hemiplegia, a basic systolic heart-murmur, which had previously existed, disappeared.—*Med. Record.*

Ventilation and Warming.

In a lecture on ventilation, lately delivered before the Franklin Institute, Mr. L. W. Leeds gives the following practical directions concerning provisions for ventilation and warming in the construction of buildings: First, never have long underground fresh-air ducts. Second, never allow a sewer, soil-pipe, foul-air flue, or smoke-flue, to come near the fresh-air supply-flue, for fear of some connection being made between them by carelessness or accident. Third, never heat a building exclusively by currents of warm air. Fourth, always put the heating-flues on the outside walls instead of on the inside walls. Fifth, endeavor strenuously to avoid the fresh-air chamber becoming a common receptacle for all the rubbish of a filthy cellar.

American Medical Association.

[As our Special Correspondent, detailed for the occasion, has failed to report on time for the present No., we borrow *verbatim et literatim*, without endorsement, the report of *The Clinic*.—Ed.]

St. Louis, Tuesday, May 6, 1873.

The National American Medical Association assembled this morning at 11 o'clock at Masonic Hall, Corner of Seventh and Market Streets.

The meeting was called to order by the ex-President of the Association, Dr. D. W. Yandell, of Louisville, who introduced Rev. Dr. Nicholls, who opened the session with prayer. Dr. Nicholls concluded with the Lord's prayer.

The chairman then introduced to the convention Dr. John S. Moore, one of the veteran physicians of St. Louis, who had been chosen to deliver the welcoming address.

As usual upon such occasions, the Dr. exploded at once into a grandiloquent burst of oratory. He congratulated his audience, some 300 in number, on the fact that the far-famed "Star of Empire" was just at that moment so far west and so high in the zenith as to be able to shine upon their deliberations. He spoke of the "Father of Waters" which flowed at their feet, of the fertility of the soil of the State of Missouri, of the city of St. Louis as the "Metropolis of the West," [what Western city is not?] containing [everything must be grand in proportion] no less than 450,000 souls. Having wrought up his audience to the proper pitch with these new and interesting facts, in a medical point of view, he exhibited to them that these things were mere trifles when compared with the vast amount of ores which lay imbedded beneath their feet, particularly of lead and iron. "Why, gentlemen," said he, glowing over the thought like a heated furnace, "not a hundred miles below this city, on the Iron Mountain Railroad, we not only have an iron mountain but iron mountains—sufficiently abundant to supply the world with this important metal for thousands of years—mountains made up of iron ore so pure as to be manufactured into horse shoes and horse-shoe nails on the blacksmith's anvil," and then, half-deprecatingly, half-jestingly, "I will not vouch, however, for horse-shoe nails." (Appreciative applause).

In explanation of the fact that St. Louis had no medical edifices or hospitals or museums and such like paraphernalia, to speak of, the speaker hastens to explain that "the people of this city did not come here, particularly, to found and foster scientific and benevolent institutions. What do you suppose, sirs, they came here for? To make money—to worship at the altar of mammon, and not the altar of science. This city, consequently, viewed from a scientific

stand-point, does not compare as favorably as we might desire with some of the other cities of this country. * * * * I am glad, however, gentlemen, to be able to say that it is contemplated soon to construct a general hospital, under the auspices of both the State and the city, which will doubtless be ample for all our wants.

"In conclusion, notwithstanding we cannot point you to magnificent medical edifices, extensive museums, and capacious hospitals, we hope to make amends, in part at least, for all these short-comings, by the cordiality with which we receive you."

The retiring President of the Association then introduced his successor, Dr. Thomas M. Logan, the newly-elected President, who came forward and took his seat.

Dr. J. B. Johnson, Chairman of the Committee of Arrangements, made a few remarks in furtherance of the welcome extended by Dr. Moore. He thought that his predecessor had almost exhausted the subject, but he could not refrain from extending the congratulations of the committee which he represented to the guests of the St. Louis medical fraternity, but wished to add their hearty welcome to the one already extended.

The committee recommend that the general meeting be held each morning in the main hall, from 9 A. M. to 1:30 P. M.

Further, that the committees, known as "sections," meet as follows: Section on Surgery, in main hall, and other sections on the third floor. Section on Materia Medica and Chemistry, in the exposition room. Section on Psychology and Medical Jurisprudence, in the "entered apprentices' room." Sections on the practice of medicine and obstetrics, in the master masons' room. Exposition of drugs, chemicals, instruments, chemical apparatus, and surgical appliances, in the banquet hall.

Dr. Logan now came forward and delivered himself of

The Presidential Address.—Every thoughtful medical man who attended this late meeting of the American Medical Association, must have felt humiliated when he heard the ranting twaddle uttered by the newly installed President, Dr. Thos. M. Logan, of California. This is not the first time that the association and the profession of the country have been chagrined by the wretched spectacle of an incompetent and pretentious ignoramus roaring his senseless but sounding phrases in the ears of the public. It was said by Napoleon on his retreat from Russia, "there is but a step from the sublime to the ridiculous." The American Medical Association, if ever sublime has certainly descended to the ridiculous. This stage appears to have been inaugurated by your very respectable fellow citizen—Dr. George Mendenhall, whose address was considered remarkable, only for its puerilities, and whose quality as presiding officer was fitly characterized by an Eastern Medical Journal, as "palsied inefficiency." Dr. Mendenhall did

not attempt eloquence. He was wisely ambitious to appear in the *role* of the old family horse, who never kicks up in the shafts nor runs away. He has been followed by two eloquent presidents—Drs. Yandell and Logan—race horses, low down in the "forties." These orators burst on the Association, breathing flames and smoke—terms which, we doubt not, will be considered by themselves to appropriately designate their rhetorical pyrotechnics. Space will not admit, nor is life long enough, to review the wonderful performance of Yandell, but our readers are entitled to some specimens from the fast, furious and formidable oration of Logan: Listen O! awe-struck reader of THE CLINIC to this exordium:

"GENTLEMEN: Just two years ago there was witnessed a spectacle well worthy our contemplation! It was full of significance, and stands forth, unparalleled, in the history of our divine art, from its earliest annals down to the present moment.

"Along the Atlantic slope of this vast continent—throughout the length and breadth of the land from Maine to Mexico—were seen, gathering together, one hundred and twenty-one living, aspiring intelligences, moved by one thought, nerved by one impulse, animated by one hope—the good of humanity!

"Abandoning, for the nonce, the peaceful pursuits of their chosen vocation, relinquishing its rewards, and exposing themselves to all the hazards incident upon velocity of locomotion, westward they steered their beneficent course, borne along the iron pathway cleaved across the continent!

"Annulling the opposing conditions of time and space, over three thousand miles they went—'skimming over the valleys, thundering across the rivers, and panting up the sides or piercing through the hearts of the mountains.' Science having made subservient to their bidding those dynamic agencies, more potent than the Genii of Arabian fable, they accomplished in seven days the travel that once consumed more than as many months: and thus they reached the city of the Golden Gate—the Mecca of their pilgrimage."

This tremendous burst of eloquence was roared out to commemorate the fact that one hundred and twenty delegates from the States east of the Rocky mountains attended the meeting of the Association at San Francisco. Further on the great orator characterizes this bit of travel as "a spectacle of moral grandeur never before witnessed in the history of the Association—never in the annals of medicine." The actors in this wonderful performance appear to agree with Dr. Logan in their estimate of its importance, for they have organized themselves into a society under the title of the "Rocky Mountain Society" and have elected Dr. Washington L. Atlee, President. We have not been favored with the "eloquent" address of Dr. Atlee, but we can affirm in advance that it is as tremendous as the flowery, poetical, sentimental, pious,—and we must say, unintelligible—address of Parvin, President of the Medical Journal Association, a society, also, whose existence is a "spectacle of moral grandeur," etc. The American Association, O! unsophisticated reader of THE CLINIC, contains a vast number of eloquent gentlemen; but one President is elected annually; hence the infrequent opportunities for rhetorical display, and hence, also, the organization of the Medical Journal Associa-

tion, of the Rocky Mountain Association, and possibly, other spectacles of moral grandeur. Let them all do their best: we believe that none of them will ever attain to the moral grandeur achieved by the eloquent Logan.

After the exordium above given, Dr. Logan expatiates on the great influence of the Association in the same stately manner, and with great smoke and flame, as follows:

"Nor is the influence yet abated. Like yon mighty river, which sweeps with ever-living, ever-moving waters along the wharves and by the busy marts of this Empire City of the West, carrying rich deposits of fertility and plenty from State to State, in its annual overflowings, to bless the dwellers upon its shores and throughout the vast regions of its lengthened course, so we are here to-day, rejoicing in the strength of our numbers, to scatter far and wide, along the pathway of humanity, the benign influences and free-will offerings of our collective counsel and experience."

He gratifies the assembled medical wisdom by this tribute to the influence of the Association:

"But, gentlemen, if the estimate I have rendered of what our Association have done be at all true—if it has made better physicians of us and raised the dignity of the profession—if it be at all true that the infusion of clear and inductive thinking, and the importation of scientific method and scholastic art, have done so much to advance medicine towards that exalted station among its cognate sciences to which it is so justly entitled—then so much the weighter are our present responsibilities; so much the louder is the call upon us to sustain our lofty character and position, by increasing the expansive circle of our usefulness, and by extending the range of our scientific resources."

Dr. Logan takes issue with Yandell on the matter of medical education, in the same eloquent strain. Yandell had in the previous meeting roared over the "rugged utility" aspect of medical education, and gave the *coup-de-grace* to scholastic attainments. Logan arises to a noble indignation when he reaches this point, and delivers himself in the following tremendous style:

"In vain may cry of 'Reform! reform!' be rung with its many changes round the circle of our schools, from Maine to Louisiana, and be re-echoed from our colleges in California and Oregon, so long as it is proclaimed in the high places of the profession, that the exigencies of the times and the requirements of humanity exact such a constant supply of medical force, as will hardly permit the acquisition of any greater degree of knowledge and attainments than such as will enable the new-fledged graduate to turn them promptly to clinical purposes. With an apparently reckless inconsiderateness of what might entail a waste of professional intellect, that may possibly be equivalent to the daily loss of threescore and ten years of progress, it has been deliberately argued, in the presence of the assembled Association, that profundity of learning is not essential for the discharge of the physician's function, and that practically the more the sphere of his scientific resources is expanded, so much the less ability does he seem to exhibit in the use of therapeutics. Germany has been instanced to substantiate this hypothesis—Germany, where the crowning glory of modern medicine is found, not only in its minute and exact knowledge of general, special and comparative anatomy and physiology—not only in those peculiarities of the therapeutics of to-day, that one of the freshest and most advanced thinkers of the age has termed *Restorative Medicine*, in contradistinction to destructive and

depressing medication—but rather in 'that purer jewel of her crown,' unblemished by the slightest taint of selfishness—*Preventive Medicine;* Germany, where cellular pathology is sweeping into oblivion a long catalogue of torturing and depressing agents, and where an amount of research in the natural history of diseases, while putting to shame our own shortcomings, is urging us, in common with the prosecutors of our science everywhere, to more determined efforts in this respect—there, in that 'vater-land,' its therapeutics have been signalized as 'something hardly better than nihilism,' and the practice of physic not much more than a 'meditation on death.'"

Having vindicated the claims of scientific medicine, Dr. Logan in the same grand style falls upon the subject of a National Sanitary Bureau, which he warmly advocates. He next proposes that the "work for the future" of the Association is to "educate the people." To this end, he suggests that they "throw away all puerile notions about the dignity of our calling, and approach the people through the only channels by which they can be reached—the newspaper and the lecture room."

Dr. Logan concludes his address in the following peroration, which as a final burst of 2:40 eloquence is worthy of being studied:

"But, gentlemen, whatever course you may think proper to pursue, I am sure that your objects will be the advancement of science, the good of humanity, and the honor and glory of our beloved profession, which for a continuous period of more than two thousand years has numbered among its votaries many of the wisest and most beneficent of the long roll of sages and philanthropists. I feel, therefore, that I cannot better conclude than by bidding you, in this connection, hearken to the utterances of Missouri's honored son, *Clarum et venerabile nomen*, pronounced eighteen years ago before this Association, and now echoed back, from his sepulchral couch, in the Capital of France:

"'On the eve of the battle of the Pyramids, Napoleon exclaimed—'Soldiers! from the height of yon monuments forty centuries look down upon you.' Gentlemen, from the heights of past ages countless worthies of our God-like profession point and beckon to a goal more elevated than ever attracted legislators and conquerors, Solons and Cæsars!'"

Is it not plain that there is but a step between the sublime and the ridiculous?

Entertainments.—The local committee reported the following arrangements for the pleasure of visiting members:

This evening there will be a *soiree musicale* at Mercantile Library Hall, commencing at 8 o'clock. A band has been engaged, and arrangements made for refreshments. The wives and daughters of the physicians are expected to be present. To-morrow evening there will be held a *levee* at the residence of Colonel J. L. D. Morrison, corner of Locust street and Leffingwell avenue. On Thursday evening, Dr. J. J. Woodward, U. S. A., of Washington, will, by special request of the Committee of Arrangements, deliver the Toner Lecture at Masonic Hall. The announcement was received with great applause. On Friday afternoon the visitors will view Lafayette Park, Tower Grove, and Shaw's Garden. Carriages to leave the hall at 2 o'clock.

Special Orders.—A letter from Dr. Woodward, U. S. A., on the organization of the medical corps of the army, was made the special order for to-morrow. Dr. Moore, chairman of the Committee on Prize Essays, notified the committee to meet at his office at 3 o'clock to-morrow afternoon. An invitation was received from the St. Louis Mutual Life Insurance Company to visit their magnificent building. Chauncey I. Filley, postmaster of St. Louis, placed an elegant mail box in the hall, and notified members that every facility would be afforded visiting delegates to receive and dispatch their letters without delay. (Applause.)

Meeting of Sections.—In the afternoon the Convention sat by sections, devoted to the consideration of the various branches of medical practice, and proceeded to discussions and reading of essays on topics pertinent to the several departments below named.

Surgery.—The meeting was convened at 3 o'clock. In the absence of the president, Dr. Warren, Dr. Lankford was elected to the chair; Dr. W. F. Peck, of Iowa, acted as secretary.

Dr. Andrews invited the attention of the profession to the use of drainage tubes in cases of pyæmia, in connection with abscesses in the chest.

Dr. Gouley, of New York, complimented the use of Chassignac's drainage tube, preferring it to the pneumatic aspirator.

The subject was further discussed by Dr. Hughes, who referred to a novel method pursued by Dr. Stone, of New Orleans, in treating abscesses in the chest—taking out a piece of rib, and thereby furnishing an opportunity for permanent drainage; and remarks were also made by Dr. Jones, of Chicago.

The subject of consecutive dislocation of the elbow was brought up by Dr. Moore, of New York, and discussed by Dr. Allen, of Louisiana, and Dr. Andrews.

Dr. Gouley, of New York, introduced a new instrument employed in arresting hemorrhage in cases where the peritoneum is divided, in cases of stone in the bladder and stricture of the urethra.

Practice of Medicine and Obstetrics.—The section met at 3 o'clock in the grand masters' room, Dr. O'Donnell, of Baltimore, in the chair, and Dr. W. Clark secretary pro tem.

The subject of treatment of puerperal convulsions was first discussed. Dr. Hasham, of Delaware, advocated the old remedy, the lancet, expressing the opinion that chloral and its substitutes were quite inefficient. Dr. Catlin, of Connecticut, thought the lancet effective in apoplectic cases, but chloral, stramonium, bromide, etc., in anæmic cases. Dr. Helm reported a case where a patient lost 252 ounces of blood, and recovered. Dr. Hasham maintained that convulsions caused the death of the child. Dr. Montgomery, of St. Louis, advocated the lancet in old and apoplectic cases. Dr. Bean, of New York, and Dr. Gaines, of Alabama, participated in the discussion.

Dr. Seguin, of New York, then read an interesting essay on "Education of the Medical Senses," which was referred to the Committee on Publication.

Dr. Smith, of Iowa, made remarks on position in labor, relating a case of lateral oblique corrected by gravity, and was followed by Dr. Maughs, of St. Louis, and one or two others.

Psychology and Medical Jurisprudence.—The hurry connected with arrival, and the more practical interest attaching to the work of other sections, injuriously affected the attendance on this section, and only about a dozen delegates assembled in the entered apprentice room, where the sessions are to be held. No organization was effected, and the meeting adjourned to next day. Several interesting papers on the medico-legal question of insanity and other kindred topics of great public interest are said to be forthcoming.

Materia Medica and Chemistry.—In a room opposite that occupied by the section on obstetrics and practice of medicine, is an interesting exposition of materia medica and the chemicals, apparatus, etc., used in medical practice. The room was only partly filled, but other articles will probably be exhibited in a day or two.

SECOND DAY.

The Convention was called to order this morning at 10 o'clock, Dr. Logan, of California, in the chair.

The Mercantile Library.—Dr. Atkinson, of Philadelphia, Secretary of the Association, read a communication from the secretary of the Mercantile Library, inviting them to visit the Library rooms during their stay in St. Louis. The invitation was accepted.

Nominating Committee.—The President directed that each State select a delegate to represent them on this committee. The Secretary called the roll of the committee so constituted.

Invitation from Detroit.—The Secretary read invitations from the medical societies of Detroit and the State of Michigan, asking the American Medical Convention to select Detroit as its next place for annual meeting. Referred to the Nominating Committee, which retired for deliberation.

Meetings of Sections.—A Special Committee to report a plan for the better arrangement of "sections," through its chairman, Dr. Howard, of Baltimore, made a report, with a view to expedite business.

The committee suggested that all lengthy papers be referred to a sub-committee, to determine as to the advisability of bringing them before the sections. Each section to have a sub-committee for this especial purpose.

Effective action was urged upon the important subject of medical instruction. That all questions of a personal character, complaints and on credentials, be referred to the Committee on Ethics without discussion. That the Committee on Ethics be constituted of not less than nine members, to be selected by the Nominating Committee and to serve for three years. The following arrangement for sections was suggested in place of that now existing:

1. Practical medicine, materia medica and physiology.
2. Obstetrics, and diseases of women and children.
3. Surgery and anatomy.
4. Medical jurisprudence, chemistry and psychology.
5. State medicine and public hygiene.

The Annual Storm Brews.—Dr. Bronson, of Massachusetts, desired that the report of the Special Committee in reference to arrangement of sections be completed. It was incomplete.

Dr. Davis moved that the report be received, and the recommendations accompanying it be adopted, except such as referred to the Code of Ethics.

Dr. Porter rose to a question of privilege. He said the Code of Ethics needed no change; we need improvement. The interruption of time by voluminous reports worked mischief to the organization. Who reads them? I conceive we want improvement in this behalf. We must not make a mountain out of a mole hill. (Gentle stamping upon the floor, which finally culminated in thunders of applause (?), so that the speaker could not proceed.)

The President suggested that the speaker had exhausted the alloted time for discussion.

Dr. Davis, of Chicago, introduced an amendment to the by-laws that a council, consisting of twenty-one members, shall take cognizance and decide all questions of an ethical or judicial character. This committee to be appointed by the Nominating Committee. After prolonged debate this amendment was voted down, when the report of the Special Committee was adopted.

From Dr. Gross, of Pennsylvania, an interesting letter was read. He stated therein his deep regret that he was unable to attend the present meeting of the Association, and trusted that the meeting would be an uncommonly harmonious one, and that no outside or evil influences might be permitted to mar its deliberations. In conclusion, he proposed certain changes in the laws of the Association, so as to make it more of a scientific and less of a declamatory body than it has heretofore been.

The Medical Corps of the Army.—Dr. Woodward, Assistant Surgeon U. S. A., and of the Surgeon General's Department, read a communication to the American Medical Association, signed by a large number of surgeons and assistant surgeons of the U. S. Army,

the argument of which shows that the Medical Staff of the United States Army has not been placed on an equal footing with the other staff corps of the army as regards rank, that they have not had the same consideration shown them in this respect as has been accorded to the navy, and that the record of services of this meritorious body of officers entitles them to the same advantages that have been granted to others.

Dr. Woodward said: Now, Mr. President, I had nothing to do with drawing up this letter, but I indorse it fully, as does also the Surgeon General. It is understood that by the provisions of the Army regulations we of the Army are debarred from making such an appeal, but we can aid the suggestion verbally, by appealing to you, gentlemen of the Association. Any army officer, except a Surgeon, can be retired in old age with a competent pay and the rank of Colonel, while a medical man can only have the rank of Major after twenty years of service, and may ask for a Lieutenant Colonelcy at thirty years. A Lieutenant Colonelcy is all we ask. I was an Assistant Surgeon twelve years ago, and hold the same rank yet. I have filled my contract with the Government, but it has not fully complied with its obligations. We have come up to the Convention for help. Will you help us? (Loud applause.) We only ask what was done for our brethren of the Naval Medical Corps, and nothing more.

Dr. Keller, of Louisville, was in favor of asking the Government for the aid required for the Army doctors.

Dr. Yandell concurred, but there was one word he wanted omitted, and that was the reference to "rebel" prisons. He wanted that to read "Confederate" prisons.

Foreign Representatives.—The Secretary read the following appointments made by the President to represent the American Medical Association to the British Medical Association. Drs. F. G. Smith, C. Wister, J. C. Cohen, of Philadelphia; Dr. E. Warren, of Baltimore; Dr. C. L. Ives, of New Haven; Dr. Edward Montgomery, of St. Louis; and Drs. F. Barker, E. Seguin, and J. C. Hutchison, of New York.

The Secretary stated that commissions for these gentlemen would be made out at once.

Report of Nominating Committee.—Dr. Johnson, of St. Louis, Chairman of the Nominating Committee, made the following partial report:

Your committee suggest the following gentlemen for the various offices named:

President—Dr. J. M. Toner, District of Columbia. First Vice-President—Dr. W. Y. Gadbury, of Mississippi. Second Vice-President, Dr. J. M. Keller, of Kentucky. Third Vice-President—Dr. W. C. Husted, of Missouri. Fourth Vice-President—Dr.

L. D. Warner, of Massachusetts. Treasurer—Dr. Caspar Wistar, of Philadelphia. Librarian—Dr. Wm. Lee. Committee on Libraries—Dr. Johnson Elliott. Secretary—Dr. Theodore A. McGraw. Committee of Arrangements—Dr. Brodie, Chairman; Drs. Jas. A. Brown, Morse Stewart, J. F. Noyes, E. W. Jenks, Henry F. Lyster, D. O. Farrard, Eugene Smith, all of Detroit. Committee on Prize Essays—Drs. J. K. Johnson, A. Sager, H. Hitchcock, of Detroit; E. Andrews, Ill.; E. S. Gaillard, Ky. Committee on Publication—Drs. F. G. Smith, W. B. Atkinson, D. Morrey Chester, of Penn.; Wm. Lee, District of Columbia; Caspar Wistar, Penn.; H. F. Askew, Delaware; Alfred Stille, Penn.

Detroit was named for the next annual meeting of the Association.

The report was adopted.

Report on Medical Education.—Dr. Carson, of Ohio, read a very interesting and important report on medical education. He set forth the general (?) dissatisfaction among the profession on the subject. He defined two classes of influences reacting on medical education—the external and the internal—of all of which it may be said that they are the products of growth under certain definite and adherent impulses, with power of adaptive modification. This Association can exert great influence by increasing its efficiency, as a tribunal before which subjects may be brought for the exercise of that most potent influence, *discussion*, and not for that impotent purpose of expecting to exercise legislative functions towards the teaching bodies.

The report was referred to the Committee on Publication.

Report on Medical Literature.—Dr. Yandell, Jr., of Louisville, read the report on "Medical Literature." The Association at its last annual meeting requested Dr. Flint to prepare the report, but at the latter's request Dr. Yandell assumed the duties.

He referred to the fact that for years the profession in America had depended entirely on the medical literature of England and the European continent. Now the medical journals published in America are ahead of the combined medical publications of England and France. This remarkable growth must be gratifying to the pride of every American physician. Going back only a quarter of a century and our country was nearly destitute of original works on medicine, almost entirely dependent upon European surgeons and physicians for instruction—now we are independent of the world; our own authors can supply all text books required by the medical student and the practitioner, and for clearness and fullness of information on all practical points, they compare most favorably with the best writings of our brethren abroad.

Dr. Yandell then discussed at length the medical journalism of

America. Over forty medical journals are now published in the United States.

The report was referred to the Committee on Publication.

Prize Essays.—The Committee on Prize Essays, of which Dr. John S. Moore, of St. Louis, is chairman, reported that only one such production had been received by the committee, which was not adjudged worthy of any of the prizes offered.

Treasurer's Report.—A report was read from the Treasurer of the Association, setting forth that there was a balance in the Treasury of only $450—owing to the heavy expense attending the publication of the proceedings of the last annual meeting.

The Centennial Celebration.—Dr. Frederick Horner, Jr., U. S. Navy, offered a resolution that the American Medical Association appoint a committee of one member from each of the original thirteen States of the Union, to report to the Centennial Celebration on the medical, surgical and biographical literature of the period of 1776.

As a tribute to Joseph Warren, Benjamin Rush, Arthur Lee, General Hugh Mercer, and other noble and patriotic physicians who aided to secure American Independence, the resolution was adopted.

Medicine and War.—Dr. Peck, of Iowa, introduced the following preamble and resolutions:

In view of the fact that the reports of the Surgeon General of the U. S. Army, as exhibited in volumes one and two of the first part of the Medical and Surgical History of the War of the Rebellion, have received a too limited circulation by reason of an insufficient issue of the same by Congress; therefore,

Resolved, That the President and Secretary of this Association be directed to petition Congress at the next session in behalf of the profession, asking that the addition recently issued be reproduced in sufficient number to permit of general distribution to the members of the profession throughout the country.

Resolved, That the thanks of this Association are due and are hereby tendered Congress for aiding thus far in developing and presenting to the profession the reports of the Surgeon General, as herein specified.

Resolved, That the thanks of this Association are hereby tendered the officers of the United States Army who have by sacrifice and labor been instrumental in placing before the profession the valuable information contained in volumes one and two of the first part of the Medical and Surgical History of the War of the Rebellion.

Carried unanimously.

Reception To-Night.—This evening, at eight o'clock, Col. and Mrs. J. L. D. Morrison will receive the delegates of the American Medical Association at their elegant mansion, corner of Locust street and Leffingwell avenue.

Medical Statistics.—Dr. Toner submitted some valuable statistics concerning medical societies and institutions in the United States.

There are 405 of the former, and 174 medical hospitals, besides 82 public hospitals, treating 144,750 patients annually.

Meeting of the Sections.—The different sections into which the convention is subdivided, to consider separately the different branches of medical science, meet at 3 o'clock, and were all well attended.

Surgery.—The meeting was presided over by Dr. Andrews, of Chicago, Dr. Peck, of Iowa, acting as secretary.

Dr. Lathrop, of Lyons, Iowa, read a paper on the treatment of bunions, referring to new apparatus and improved modes of treatment.

The discussion was confined almost exclusively to this subject, and comprised remarks by Drs. Moore, of Rochester; Brady, of Princeton; Miles, of Indiana; Lucas, of Illinois; Chambers, of Illinois; Bronson, of Massachusetts, and others.

Practice of Medicine and Obstetrics.—The chair was occupied by Dr. O'Donnell, of Baltimore, Dr. E. W. Gray, of Bloomington, Ill., acting as secretary.

In response to the president's call, no papers were presented, and on motion of Dr. Gray a request was made that all papers belonging to the section be placed in the hands of its officers.

Dr. Todd, of Kansas City, addressed the section on the subject of physiological anomalies in the configuration of the bony and soft walls of the pelvis as a cause of retardation in labor.

The points of the paper were reviewed by Dr. Hollister, of Illinois, who also made some remarks on secondary hemorrhage after delivery.

The hour having arrived, Dr. Drisdell, of Philadelphia, read his paper on the microscopical appearance of ovarian tissue, in the course of which he announced the discovery of a new cell which he denominated the ovarian granular cell. The paper was referred to the Committee on Publication.

Dr. Howard presented a memorial paper by an absent member, on medical education, which was referred to a special sub-committee consisting of Drs. Howard, Pallen, and Todd.

General remarks of a practical character were made by Dr. Garric, of New York, and others, continuing until nearly five o'clock.

Psychology and Medical Jurisprudence.—This section met in the session hall of the Convention, Dr. Comegys, of Cincinnati, in the chair; Dr. Hazard, of St. Louis, secretary.

On invitation of the section, Dr. Hughes, of St. Louis, read a paper entitled "Brain Diseased and Mind Deranged," advocating the peculiar physiological views he has set forth in the medical

society. The paper was listened to with close attention, and was apparently received with considerable favor.

Dr. J. B. Hough, Professor of Miami Valley Institute, read an interesting and strongly original essay on "New Methods of Experimentation in the Problem of Spontaneous Generation."

THIRD DAY.

The delegates re-assembled this morning at half-past nine, in the main hall of the Masonic building. The attendance was fully as large as on the preceding day. Dr. Logan in the chair, with Dr. Atkinson as Secretary. Dr. O'Hagan, of North Carolina, and Dr. Paul F. Eve, of Nashville, were added to the committee to visit foreign medical associations. A letter was read from Dr. Eve, regretting his forced absence from the present meeting.

Nomenclature of Diseases.—The chairman of the Committee on Nomenclature of Diseases submitted the following report:

In accordance with the resolutions appended to the minority report of the committee, adopted by the Association at its last meeting, one thousand extra copies of the proposed nomenclature were printed in pamphlet form, and distributed to the profession, and to the various medical journals, both at home and abroad; and such criticisms and suggestions as would represent their opinions as to its merits and fitness were invited from those receiving it. To this invitation not a single response has been made by medical journals, and but from two practitioners, the latter being such additions as in the judgment of these gentlemen would render the work more complete, but which, in the judgment of the majority, describe conditions which none but a specialist could recognize. From this statement of the results of a year's consideration of the proposed nomenclature, the conclusion may be drawn that the profession are satisfied with the work. Your committee are not willing to entertain the only other conclusion, that men of culture and practical men are indifferent upon a subject of such importance; they therefore again present the resolutions appended to the majority report and ask for their adoption:

Resolved, That the report of the Committee on the Nomenclature of Diseases be referred to a special committee of five members, to be appointed by the President, who shall examine it and report upon its final disposition at the present meeting of the Association.

Resolved, That on the favorable report of such committee, it shall be referred back to the Committee on the Nomenclature of Diseases for the preparation of an index to be published with it, in the forthcoming volume of the Transactions.

Dr. Woodward, U. S. A., spoke against the adoption of nomenclature presented by the majority, setting forth the errors and short-comings; and on his recommendation the following resolutions were adopted:

Resolved, That in the opinion of this Association it is inexpedient to adopt the nomenclature and classification presented by the majority of the Committee on Nomenclature at the meeting at Philadelphia

Resolved, That a committee of three be appointed by the President, whose duty it shall be to communicate the foregoing resolution to the proper committee of the Royal College of Physicians of London, and to negotiate for the representation of the American Medical Association in the first decennial revision of their nomenclature.

An International Medical Congress.—On motion of Dr. Toner, of Washington City, the following resolution was adopted:

Resolved, That in the opinion of this Association it would be an excellent opportunity, at the American Centennial in 1876, for an International Medical Congress to consider, and, if practicable, to adopt, a uniform classification and nomenclature of diseases, to be used by the profession throughout the world.

From the Mediterranean.—The President read a letter from Dr. R. R. Stover, at present at Mentone, in the Mediterranean, asking the Association to appoint a committee to compare the American and foreign winter cures. The letter was referred to the Nominating Committee.

The Secretary's Salary.—Dr. Kellar, of Louisville, offered the following resolution:

Resolved, That the sum of $500 be appropriated as an honorarium for the services of the permanent Secretary during the present year, provided such an amount remains in the treasury after paying necessary expenses.

A National Sanitary Bureau.—Dr. Bell, of Brooklyn, New York, offered the following resolutions:

Resolved, That in the judgment of this Association the establishment of a National Sanitary Bureau, with relations to the General Government similar to those of the Bureaus of Agriculture and Education, is highly desirable as a means of promoting sanitary science and the protection of the public health.

Resolved, That this Association request of the U. S. Educational Bureau to so extend the scope of its inquiry as to include vital diseases and mortuary statistics in relation to local, meteorological and geological influences, and to disseminate the information so collected throughout the country.

After considerable debate these resolutions were referred to the Committee on Public Hygiene and State Medicine.

Suggestions on Medical Education.—The hour of eleven having arrived, special business was in order, and the report of Special Committee was called, to present suggestions on the subject of medical education. Dr. Pollock, of Pittsburg, read the following report:

The committee appointed by the President, at the last meeting of the Association, to take into consideration the propriety of adopting the suggestions of the Committee on Medical Education, are fully impressed with the importance of the subject, and acknowledge the value of the suggestions offered. But we believe it wholly impracticable to carry into operation any law which does

not meet the hearty approval of diverse interests connected with the teaching and practice of medicine; and while we have no doubt that this Association has grown to be a power in the profession, felt and recognized by all, yet to make that power effective, its decisions should be calm and deliberate. Therefore your committee, after due deliberation, have concluded to recommend the adoption of the conclusion of the report of the Committee on Medical Education, which is as follows: That a Congress, composed of two members from each State and Territory, and one from each recognized medical college, all to be members of this Association, be appointed (or nominated by the Nominating Committee) at this present session. That said committee, or congress, shall meet three days previous to our next annual meeting, and that said committee, or congress, shall perfect a plan for some uniform system of medical teaching, which, when adopted by the Association, shall be the only recognized method of medical teaching in the United States.

This report was referred to the Committee on Nominations; then, after long debate, brought back and laid on the table.

The U. S. Marine Hospital Service.—The following amendment to the Constitution of the American Medical Association, as to its relations with the U. S. Marine Hospital Service, proposed by Dr. Hartshorne, of Philadelphia, at the last annual session of the Association, was brought up and referred to the next year's meeting. Its purpose is to place the United States Marine Hospital Service in the same relative position in the American Medical Association as the Medical Departments of the United States Army and Navy.

The Meeting at Detroit.—It was resolved that the next annual meeting, to be held at Detroit, commence on the first Tuesday in June, as it will be too cold in that locality to assemble together early in May, as usual.

Alcoholic Stimulants.—Some temperance man from the rural district wanted the Association to emphatically declare against the free use of alcohol in prescriptions, etc. It was stated by the chair that a caution against the too free use of alcohol had been declared last year, and the extra teetotaler, with his motion, was ruled out of order.

Election of Officers.—The following amendment to the Constitution was proposed and laid over, under the rule, for one year:

Resolved, That article 12, of the Constitution, be amended as follows: Strike out the second clause of first paragraph and insert "They shall be nominated by the Judicial Council and shall be elected by vote on a general ticket."

The Committee on Nominations, after a prolonged absence, returned and reported as follows through the chairman, Dr. Johnson, of St. Louis:

Chairmen and Secretaries of Sections for 1874.—1. Practice of Medicine, Materia Medica and Physiology—Dr. N. S. Davis, of Chicago, Chairman; and Dr. Frothingham, of Ann Arbor, Michigan, Secretary.

2. Obstetrics and Diseases of Women and Children—Dr. Theo. Parvin, of Indianapolis, Chairman; and Dr. Montrose A. Pallen, of St. Louis, Secretary.

3. Surgery and Anatomy—Dr. S. D. Gross, of Philadelphia, Chairman; and Dr. Alonzo Garcilon, of Maine, Secretary.

4. Medical Jurisprudence, Chemistry and Psychology—Dr. A. N. Talley, of South Carolina, Chairman; and Dr. E. L. Howard, of Maryland, Secretary.

5. State and Public Hygiene—Dr. A. N. Bell, of Brooklyn, Chairman; and Dr. A. B. Stuart, of Winona, Minnesota, Secretary.

Resolved, That the Secretary of the Association be authorized to fill up all vacancies in the Committee from the States and Territories.

Also, that Dr. A. N. Bell be President, and Dr. A. B. Stuart, as Secretary.

Committee on Necrology.—Chairman, Dr. A. Sager, Ann Arbor, Michigan, and committee to remain as last year, excepting Dr. Alonzo Garcilon, of Maine, in place of Dr. D. McReese, deceased.

Judicial Committee.—Three years—Drs. Brodie, Mich.; N. S. Davis, Ill.; E. L. Howard, Md.; Wm. O'Baldwin, Ala.; Dean, N. Y.; J. P. Logan, Ga.

Two years—Drs. L. S. Joynes, Va.; R. N. Todd, Ind.; Askew, Del.; J. E. Morgan, D. C.; Daniel Lillie, N. J.; S. N. Benham, Pa.; Dunlap, Conn.

One year—Drs. Bartlett, Wis.; Powell, Ill.; Gale, Ky.; Moses, Mo.; Hughs, Iowa; Bemnis, La.; Cheever, Mass.

Special Committee.—Dr. H. R. Storer, Boston, Mass., Chairman of committee to report on American as compared with foreign winter cures.

The report was adopted by the Association *in toto*.

(It was my intention, Mr. Editor, to have kept up a running commentary all the way through, especially upon the section work, but I soon found that it would encroach too much on your space. I may say only in conclusion that the Association fulfilled the expectations of every one; that is, no one expected it would do anything, and it did just simply—nothing. And thus endeth the 24th session of the great American Mudfog Association for the Advancement of Everything and the Accomplishment of Nothing.)

JOHN SMITH, M.D.

—*The Clinic.*

Editors' Book Table.

[NOTE. — All works reviewed in the columns of the CHICAGO MEDICAL JOURNAL may be found in the extensive stock of W. B. KEEN, COOKE & CO., whose catalogue of Medical Books will be sent to any address upon request.]

BOOKS RECEIVED.

Hand Book for the Physiological Laboratory. By E. KLEIN, M.D., Assist. Prof. in the Pathological Laboratory of the Brown Institution, London—formerly Privat-docent in Histology in the University of Vienna; J. BURDON-SANDERSON, M.D., F.R.S., Prof. of Practical Physiology in University College, London; MICHAEL FOSTER, M.A., M.D., F.R.S., Fellow of and Prælector of Physiology in Trinity College, Cambridge; and T. LANDER BRUNTON, M.D., D.Sc., Lecturer on Materia Medica in the Medical College of St. Bartholomew's Hospital, London. Edited by J. BURDON-SANDERSON. In Two Vols. With 133 Plates, containing 353 Illustrations. Vol. I, Text; Vol. II, Plates. Philadelphia: Lindsay & Blakiston. 1873. 8vo. Text (and Index) 585 pages.

This is a most superb work, and fills a hiatus which every physiological student has lamented. Under its guidance all the more important experiments whereby the great science of physiology has been advanced, and rational therapeutics suggested, may be verified, and skill in manipulation and method gained for the initiation of new and, perchance, bolder inquiries. For, doubt it who may, the sure basis of medicine, as either science or art, is only to be found in the minute and exact experimentation which modern physiology demands, supplemented by the wider, more comprehensive, more dazzling and striking generalizations of modern meteorology and its kindred sciences.

A Hand Book of Medical Electricity. By HERBERT TIBBITS, M.D., L.R.C.P., London, Medical Superintendent of the National Hospital for the Paralyzed and Epileptic; Medical Officer for Electrical Treatment to the Hospital for Sick Children, Great Ormond St. With Sixty-four Illustrations. Philadelphia: Lindsay & Blakiston. 1873. 8vo. Cloth. Pp. 164.

The four chapters of this concise and useful manual discuss respectively: medical electricity and electro-medical instruments;

the application of electricity; electricity as an aid to diagnosis; and electro-therapeutics.

Mechanism of the Ossicles of the Ear and Membrana Tympani. By H. Helmholtz, M.D., Professor of Physiology in the University of Berlin, Prussia. Translated from the German, with the author's permission, by Albert H. Buck and Normand Smith, of New York; with Twelve Illustrations. New York: William Wood & Co., 27 Great Jones Street. 1873. Thin 8vo. Cloth. Pp. 69.

Probably the most complete and thorough exposition of the subject extant. The mathematical relations are developed with extreme care and accuracy, with an abstruseness, indeed, exceedingly perplexing to the ordinary scholar, nevertheless the work in great part is readily comprehensible and instructive.

A Treatise on the Principles and Practice of Medicine; Designed for the Use of Practitioners and Students of Medicine. By Austin Flint, M.D., Professor of the Principles and Practice of Medicine and Clinical Medicine, in the Bellevue Hospital Medical College. Fourth Edition, carefully Revised. Philadelphia: Henry C. Lea. 1873. 8vo. Pp. 1070.

It is unnecessary, of course, to either introduce or eulogize this now standard treatise. All the colleges recommend it as a text book, and there are few libraries in which one of its editions is not to be found. It has accomplished a great work, if in nothing else, in causing the abandonment of the hypermedication that most of its predecessors encouraged and advised. Briefly, it is replete with conservative medicine.

The present edition has been thoroughly revised so as to bring it up to the author's present level of experience and reading. His own clinical studies, and the latest contributions to medical literature, both in this country and in Europe, have received careful attention, so that some portions have been entirely rewritten and about seventy pages of new matter have been added. The additions, as might have been expected, are especially to the section devoted to diseases of the nervous system.

PAMPHLETS, ETC.

The Obstetrical Journal of Great Britain and Ireland, Including Midwifery and the Diseases of Women and Children. Edited by JAMES H. AVELING, M.D., Physician in the Chelsea Hospital for Women, and ALFRED WILTSHIRE, M.D., Ass't Physician Accoucheur to St. Mary's Hospital; to which is added an American Supplement. Edited by WILLIAM F. JENKS, M.D., Obstetric Physician to the Philadelphia Dispensary. To appear in Monthly Numbers, of about Eighty octavo pages each, very handsomely printed, price $5 per annum, in advance. Single Numbers, 50 cents each.

The first (April) number of this new journal has reached our table, and seems to fully merit the patronage asked for it. Among the contributors we recognize a large number of names of world-wide reputation. The American Supplement is to be separately paged for convenience of reference. Address Henry C. Lea, Philadelphia.

Ophthalmic and Aural Surgery Reports. By JULIAN J. CHISHOLM, M.D., etc., etc. Baltimore, Md.

Quarterly Summary of the Transactions of the College of Physicians of Philadelphia, from Feb. 7, 1872, to Oct. 16, 1872, inclusive.

On Ovariotomy. By J. MARION SIMMS, M.D., one of the Surgeons of the New York State Woman's Hospital, etc. Pp. 85.

The feature of this monograph is, we may say, developed in these sentences:

"The time will assuredly arrive when peritonitis, so called, will not kill, because we will learn that the effusions in the peritoneal may be as safely evacuated as those of the pleural cavity; that the danger will consist, not in opening the peritoneal cavity, but in keeping it closed with its retained fluids to poison the blood and take the life of the poor sufferer. The time will also come, when gunshot and other wounds of the abdomen, and perforations of the intestine, will be treated by opening the peritoneal cavity, and washing out or draining off the septic fluids that would otherwise poison the blood; for death in all these cases is produced by the same causes and in precisely the same way, and they will require the same plan of treatment."

All of which we steadfastly believe.—The author will accept our thanks for this valuable and interesting pamphlet.

The Function of the Eustachian Tube in its Relation to the Renewal and Density of the Air in the Tympanic Cavity, and to the Concavity of the Membrana Tympani. By THOS. F. RUMBOLD, M.D., St. Louis. Pp. 40.

Meteorology and its Professors. A review by the Editor of the Canada Med. and Surg. Journal, Counter Statement, etc., etc. By THOS. D. KING, Montreal. 1873. Pp. 26.

Transactions of the Medical Society of the State of California, during the years 1871–72. Sacramento. 1872. Pp. 228.

Editorial.

"De Profundis Clamavi"—"Out of the Sewers."

For several months past, popular patience, well nigh exhausted by the inefficiency and negligence of the Board of Health, has been gradually but certainly giving place to popular indignation, which, with the advance of the season, and consequent increased risk to public health, has been more and more decided in its demands for the abolition of this muncipal monstrosity, this sanitary abortion, miscalled a Board of Health. Stimulated by the lash of public opinion, the Board has at last essayed to do something—what? Honest sanitary work? No! Something to protect public health? No! Only to make a "report," to find an excuse for its own imbecility in the alleged inefficiency of another branch of the muncipal government. This is simply contemptible.

When the Board stands arraigned before the tribunal of public opinion for willful negligence, for which its only alternative plea is gross ignorance, it evades the issue altogether, and attempts to assign as the efficient cause of the great mortality of the city, insufficient sewerage.

And gravely attempts to demonstrate by figures that the man who has 14.50 feet of sewerage is safe, in comparison with him who has only 9.99 feet of this sanitary panacea. Upon such a theory as this, what a perfect temple of hygeia was the "Old Armory," where the proportion of sewer, *per capita*, was unlimited.

However, to give the devil his due, "the report" does not attribute the high rate of mortality *solely* to lack of sewerage, but assigns a portion of it to the "rain-fall." This is lucky for the Board of Public Works, and places a portion, at least, of the responsibility upon shoulders somewhat better able to bear it.

It would seem, then, from this "report," that the result of the operations of this Board of Health since 1867, carried on at an expense of half a million dollars more or less to the city, has been the discovery, that the cause of the great mortality of Chicago is insufficient drainage and too much rain. The JOURNAL moves that the "report" be accepted; that the Board of Public Works be requested to construct for each inhabitant his due proportion of 14.50 feet, or whatever it may be, of sewer; that the clergy be requested to pray for dry weather; and, above all things, that this Board of Health be discharged from further consideration of the subject. W. H.

To Correspondents.

Some of our correspondents may miss replies, for the somewhat personal reason that a sneak thief invading our sanctum, took off with him not only a portion of our wearing apparel, memorandum book, etc., but also a goodly packet of letters, some unanswered. Replies forwarded on notice.

Homœopathy in the Michigan University.

The Regents decree that hereafter all diplomas shall be signed only by the President and Secretary of the University. An adroit dodge.

THE

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EDITED BY J. ADAMS ALLEN, M.D., LL.D.; AND WALTER HAY, M.D.

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Original Communications.

ARTICLE I.—*Transactions of the Chicago Society of Physicians and Surgeons, at the Meeting June 9th*, 1873. Reported by P. S. HAYES, M.D.

Paper on the Physiological Relations of Alcohol, by WALTER HAY, M.D. Read by invitation.

Cases, reported by W. C. LYMAN, M.D.

GENTLEMEN:—The present age has been termed that of skepticism. Within the domain of the physical sciences, skepticism and investigation are the parents of knowledge. He who doubts has awakened to the possibility of progress; he who blindly accepts dogmata sleeps under the tomb of tradition.

An occasional review of the principles of our professional faith may not be altogether unprofitable, if it results in nothing more than in the exercise of greater circumspection in their adoption and establishment.

The iconoclast, who tears down from their niches the idols of a false faith, may be the prophet of a new avatar.

The confusion, apparent in the minds of moralists, political

economists, and physicians, regarding the influence of alcohol upon the human system, suggests the vagueness and uncertainty of the data upon which their opinions have been based, and indicates the possibility of deducing sounder conclusions, by elucidating its true physiological relations.

We are told by therapeutical authorities, that alcohol is a stimulant; lexicographers tell us that a stimulant in medicine is an article which produces a quickly diffused and transient increase of the vital energy and strength of the heart and arteries.

The dogma, that alcohol is stimulant, has been long considered a principle in therapeutics; let us examine upon what physiological foundations the principle rests; let us investigate its three-fold relations to the three essentially vital physiological functions, circulation, respiration, innervation.

The effects of alcohol upon the circulatory system are first made visible by an increased afflux of blood to that portion of the integuments of the face constituting the vascular area supplied by the ultimate ramifications of the ophthalmic artery, indicated by the flush of heightened color upon the cheek. The ophthalmic artery being the first branch of the carotid after its passage through the carotid foramen into the cranial cavity, the condition of its circulation will afford a very fair index of that of the entire encephalic circulatory system. Coincidently with these changes, occurs acceleration of the heart's action, indicated by increased frequency of the radial pulse. There is at the same time dilatation of the arteries and arterial capillaries, marked in the first case by augmentation in the number of red corpuscles present in the capillaries of the face, and in the second by the enlargement of the radial pulse.

The dilatation of the arteries of the central nervous system is manifested by symptoms to be considered under their appropriate head.

If the exhibition of the drug be continued, the effects just mentioned are intensified, the flush in the face deepens and extends more widely as new vascular areas are involved; the vessels of the conjunctivæ are engorged, and the swollen condition of the veins testifies to the dilatation of both the capillaries and trunks of the venous system likewise; pulsation diminishes in rapidity but not in volume, until the heart's action might even cease.

Upon the respiratory system the drug produces effects no less marked; first, an acceleration both of inspiration and of expiration appears coincidently with the increased rapidity of the heart's action and the dilatation of the capillaries already referred to; notwithstanding which, evidences of imperfect oxydation rapidly accumulate in the deepening color of the countenance and the turgidity of the venous system.

But the effects of alcohol upon the nervous system constitute the most reliable data from which conclusions regarding its true physiological relations may be deduced; while these are indissolubly correlated with the modifications of circulation and respiration already described, they, nevertheless, retain sufficient individuality to admit their identification.

The first of these to which I will direct your attention, is a modification of sensibility, a sense of heat or burning in the stomach and in the face. Whether this be due to a direct modification of sensory innervation, or to an indirect change resulting from the increased amount of oxygen carried to the terminations of the sensory nerves by the red corpuscles of the blood, has not yet been determined. Next, is a diminution, a quasi paralysis, of vasomotor activity, manifested in the dilatation of the arteries already indicated. There is, moreover, impairment of the functional activity of the cerebral hemispheres, indicated by diminution in the energy of the will in dominating and controlling the activity of subordinate ganglia, resulting in insubordination of the emotional centres, and the centres of special sensation, whose impressions become confused, inaccurate and unreliable; the sensory and motor ganglia of the mesocephale respond reluctantly or abnormally to normal impressions, whether centripetal or centrifugal. Common sensation is impaired, muscular motions become irregular and incoördinate, until innervation generally is reduced to its lowest possible expression; the subject, by the abolition successively of the functional energy of the superior ganglia of the nervous system, is reduced gradually, through all the lower phases of animal life, to a merely vegetative existence.

The symptoms induced by alcohol having been considered as much in detail as the limits of this paper will permit, their physiological significance may next be discussed.

The first of these, increased afflux of blood to the arteries and

capillaries, can only occur by dilatation of those vessels (farther shown by increased fullness of the radial pulse), and this, again, by relaxation of their muscular walls; now the calibre of blood vessels is regulated by the amount and degree of nervous irritability, hence dilatation of the calibre of blood vessels is simply another expression for vaso-motor paralysis or quasi paralysis, for withdrawal of nerve force. Hence it appears that the first effect of alcohol upon the circulatory system, with its correlative expression through the nervous system, is *diminished* rather than *increased* vital energy.

But the pulsations of the heart are at the same time increased in number, and this fact constitutes the corner stone of the stimulant theory of alcohol.

This corner stone, however, will crumble under the hammer of physiological criticism. It would certainly be a physiological paradox, that an agent which can induce a condition of diminished vital energy in one portion of the nervous system, should occasion the opposite state in another; modern physiology has explained the paradox by demonstrating the inhibitory action of the pneumogastric nerve upon the heart, and shown that whatever interrupts its influence upon that organ occasions in it increased rapidity of action. This necessitates the admission of reciprocity of action in the heart and arteries, without which these phenomena and their modifications would be inexplicable.

The effects upon the circulation in the face are identical in character with, although of course infinitely less conspicuous than, those induced by section of the cervical sympathetic.

Coincidently with these again is temporarily increased rapidity of respiration, the accelerated arterial necessarily involves greater rapidity in the venous circulation also, and an increased afflux of blood to the lungs, whose vessels are moreover less able to resist it, the result of which is the necessity for more rapid oxydation through the respiratory surface, evidence of disturbed co-ordination between respiration and circulation, the direct result of partial arrest in the innervation of the pneumogastric nerve, as determined by actual experiment to be temporary acceleration with consecutive retardation of respiratory movements, with engorgement of pulmonary vessels. To these must be added the evidences of diminished exhalation of carbonic acid from the respiratory surface, amounting,

as shown experimentally, to twenty-five per cent., after the ingestion of even a small quantity of alcohol.

But it has been shown that there was a hyperæmic condition, so to speak, of the ophthalmic artery, and inferentially of the brain. Now, hyperæmia of the cortical portion of the hemispheres of the brain is the physiological equivalent of the metaphysical condition which is termed delirium, and this condition is typified in the intellectual aberrations of the alcoholized subject. There are probably very few left who recognize in the incoherent ravings of a maniac any evidences of *increased vital energy*, but rather of energy perverted and degraded.

Or shall we look for such evidence in the disorderly manifestations of emotional activity which has become relatively conspicuous by reason of the degradation of the higher faculties, which in a normal condition regulate and control their energy?

Or, again, do we find it in the more or less complete suspension of functional activity in the organs of special sensation as the medulla oblongata becomes involved in this hyperæmic condition and their nervous centres are successively implicated? The dimmed eye, the deafened ear, the stammering tongue, all indicate paralysis, and to these are added, as the hyperæmia gradually suspends the functional energy of cerebellum and spinal cord, vertigo, anæsthesia, muscular incoördination, and paralysis.

From the first symptom to the last, paralysis is the essential lesion in every phase of acute alcoholism. Whether we consider the dilatation of arteries, the increased blood supply, the escape of the heart from its normal control, diminished volitional energy, disordered intellection, irrepressible emotional activity, diminished special sensibility, suppression of pulmonary exhalation, and glandular secretion, loss of common sensation and of motor power, separately or together, it will be perceived that each one of them points back to its ultimate factor, vaso-motor paralysis, diminished nerve-power.

The facts adduced thus far, although they comprise only the salient points in the subject of the physiological relations of alcohol, and sufficient only to enable me to sketch the bare outlines of its history, will, I think, indicate clearly that, so far from increasing vital energy and strength of the heart and arteries, alcohol

diminishes both, and thus fails to fulfill the definition of a stimulant.

The object of this paper is not to favor a blind and unreasoning prejudice against the use of this drug, either intra- or extra-professionally, but by pointing out its real effects to suggest the conditions in which it may be used most beneficially in the alleviation of the ills of human life, and thus be retained within the category to which it originally belonged, of blessings to humanity, instead of being condemned to that into which physiological blindness has permitted it to be relegated, of the curses.

The question whether the drug be or be not a stimulant, may be said to be simply a war of words, but words are symbols of ideas, and men are governed by symbols rather than by ideas, hence the acceptation of a false symbol involves subordination to its correlative false idea.

A correct appreciation of the true physiological relations of alcohol will result, it is to be hoped, in the substitution of a more strictly scientific therapeutical application of the drug for the almost purely empirical method at present in use by many, even in the front ranks of our profession; will prevent in the future the administration of this drug to relieve chronic engorgement and hypertrophy of the liver by one distinguished practitioner, or to sustain the failing energy of a fatty heart by another.

Much of the demoralization which has resulted from the abuse of this drug extra-professionally, has its source in professional ignorance, and while we are not willing to be held accountable for any considerable share of human misery, we are bound to investigate for ourselves a subject, upon whose correct appreciation by physicians such important issues depend.

Gentlemen, I trust that the shortness of time at my command for reducing these ideas to a presentable shape, and the necessity for condensing their expression within the limits of a brief paper, will be a sufficient apology for the cursory manner in which I have treated a subject which admits of and deserves the utmost elaboration.

Permit me, in closing, to thank you for the honor which you have done me in your invitation, and the courtesy which you have shown me in your kind attention.

After the reading of the paper a general discussion ensued, in which most of the members participated, and in which Dr. Hay made special application of the principles set forth in the paper. After this, Dr. Lyman read a report of the following cases which occurred in his practice. He was induced to present them to the society, more from an idea of their possible novelty than any special lesson that they might teach.

Case 1. Mrs. S., a healthy young woman about 28 years of age; nine years married; had never before supposed herself pregnant; applied to me to attend her in her approaching confinement, in September last, stating that she expected her labor to occur by the middle of October. October came and nothing was heard of the case till near the end of December, when the husband called upon me in a state of anxiety, which may be considered perfectly natural when it is understood that he left home on January 15th, previous, and his wife had written him of her (and his) good fortune, while absent; and he found his wife, on his return, in that interesting state (apparently) that "ladies delight to be, who love their lords."

To quiet his mind, I explained how sometimes a case of the kind went on to a period far beyond the average 280 days, and this was probably one of them. This satisfied him for a time, but shortly he returned, and I fairly thought that the pregnancy must have commenced on his return, June 15, 1872, which would render her labor due March 15, 1873. This date came, and they consented to an examination. I found the abdomen enlarged to the extent of an eight months pregnancy, the prominence being slightly to the left side. There were movements that were to all appearance so like the movements of the fœtus in utero, that they well might deceive both patient and physician, but there was no sound of the fœtal heart. Examination per vaginam showed the womb in nowise enlarged, greatly retroverted, but presenting no evidence of any other disease or disorder. Of extra-uterine pregnancy, ovarian cyst, or solid tumor, there were none. There were only the prominent abdomen and apparent fœtal movements to account for. These have gradually passed away since she has been assured of her true condition. I can only conclude that the profound mental impression that she was to bear a child, had its effect

upon the economy of nature, so as to develop this growth of and produce muscular movements of the abdominal wall, such as might attend real pregnancy.

Case 2. I desire to relate the following case more to put it on record than anything else. Miss A., a young lady 27 years of age, consulted me respecting the propriety of her marrying. Having never menstruated, she suspected all was not right with her. She was of full height, osseous and muscular; system well developed; face, figure and voice essentially feminine.

Examination of the genitals showed a rudimentary development of mons veneris, clitoris, labiæ, and fourchette, the extension formed of the perinæum to the pubic arch being thick, firm and fibrous. Directly below the pubis was a little pocket lined by mucous membrane, about one-third of an inch in diameter, and about three-quarters of an inch in depth, in the upper wall of which the urethra opened with papilla-like eminence—this opening was a rudimentary vagina. For fourteen years she has had a monthly return of the symptoms that ordinarily attend menstruation, and was frequently conscious of sexual desire. Hence I conclude that the ovaries are developed and possibly the uterus, for I made no examination per rectum, (the purpose of the consultation being subserved by the answer that she could not marry), and the external genitals wholly rudimentary.

Case 3. In July, 1872, first saw Wm. Thorpe, stone-cutter, age 29, of slight build, average intelligence, native of Scotland. During the noon hour had laid down beside one of the masses of stone on which he had been at work. It fell over upon him, and he was taken up wholly insensible. An hour later he appeared as follows: A condition of profound shock, with the usual coldness, weak pulse, sighing, respiration and tossing to and fro, right side of the face frightfully bruised, with the eye protruding, and a perpendicular fracture with depression of the outer table, two inches in length, and one inch behind the right ear.

It is useless to detail the treatment, that in four or five days was followed by a return of consciousness, attended by most severe pain in the head, which gradually diminished till at the end of sixty days he was free from it. The right eye remained largely

prominent and the orbit full, the conjunctiva enormously œdematous, and excessively painful.

Two weeks from the reception of the injury, obscure fluctuation was observed over the globe of the eye, and an abscess found at the depth of one inch, from which two ounces of sero-purulent matter were discharged, together with a number of pieces of a white apparently fibrous mass, that proved to be portions of white brain tissue. Exploration of the abscess by Dr. Jackson, (who was present at this time), showed fracture of the superior orbital plate, with depression of its posterior part, pushing the eye permanently forward, and admitting the probe into the cranial cavity. A fracture extending directly backward, horizontally, met the perpendicular fracture behind the ear, traversing the petrous portion of the temporal bone, doubtless in a straight line, and admitting the probe to the depth of four and one-half inches, far enough to meet the perpendicular portion of the fracture.

A slight degree of relief followed the evacuation of the abscess, and a serous discharge continued for about two weeks, when the external opening closed spontaneously. At the end of two months he was discharged, well, and at the end of three months resumed his work, stone-cutting.

The only unpleasant sequel of the case has been the occurrence of convulsions of epileptiform character about a week after he resumed work, induced by stooping at his work in the hot sun. Two drachms of bromide of potassium, given daily for three or four days, apparently controlled this symptom, for since that time (about nine months) it has not returned.

His present condition is noticeable from the fact that the right eye is half an inch in advance of the left; the sight only impaired by the want of accommodation with its fellow, caused by displacement only.

I believe this case to be chiefly remarkable for its recovery after a portion of the brain had been torn off, and expelled from the cranial cavity by occurrence of abscess.

Case 4. Claude McIntosh, age 24, of previous good health, of irregular habits, colored, born of healthy parents, family numerous, all healthy. First felt ill about the 1st of December last. Had occasional attacks of pain in the abdomen, for which, to use his own

words, he "would take two or three drinks," and it readily passed away. This, together with habitual constipation, continued until about February 1, when he, for the first time, gave up his employment upon one of the sleeping car lines. From this time the attacks of severe pain occurred almost daily, often lasting two or three hours, when they would pass away, leaving him entirely comfortable. With these symptoms, a moderate appetite, tongue slightly furred, no febrile action, no undue fullness, tenderness, or hardness of the abdomen. The bowels were easily moved by moderate doses of any laxative medicine. He was several times quite freely purged, with apparent relief, but ultimately the pain always returned. About the middle of March, after a fortnight of comparative quiet he had a return of the pain; it often came on several times daily, and subsided without apparent reason. He was put on the steady use of opium till the pain was controlled, and when entirely quiet, an emulsion of two ounces of castor oil administered. This was followed by the evacuation of two or three dozen scybalæ of the size of a chestnut, and another smaller dose of oil evacuated a solid mass, three inches in length and one and three-fourth inches in diameter. I thought then the trouble was over, but in reality it had just begun. Great pain followed in the left iliac fossa, with extreme local tenderness and moderate swelling, the pulse for the first time became quickened and rose to 140. All the symptoms of acute peritonitis were rapidly developed. Opiates were largely given, beginning with three grains of morphine daily, and rapidly increasing it, as a tolerance of it became established, till he took eight grains of the sulphate daily. Enough was given without regard to quantity to control the pain and reduce the rapidity of cardiac action. When once fully impressed by the sedative influence of the opiate, the symptoms abated, and at the end of two weeks the bowels were again evacuated, moving freely with little pain, the tenderness, tympanitis, and prominence of the left iliac region, being reduced. Two or three dozen more little masses, and one large one, even larger than the other, were voided without the use of any purgative. With abated fever, swelling and pain, and returning appetite and sleep, I thought that the end had come, but the end was not yet. Ten days of apparent convalescence, during which he took daily fluid food, and had stools, were followed by a return of pain and abdominal

tenderness. In anticipation of another large scybala, I ordered an enema of infusion of elm bark; it was followed by a copious stool, containing another mass larger than either voided before, being fully three inches long and two inches thick, shaped not unlike a potato, and quite as hard. Entire relief from pain followed, but in an hour another stool of nearly pure blood followed, then others, and before two hours had elapsed he was dead from hemorrhage.

Autopsy thirteen hours after death by Dr. Jackson and the writer.

Abdomen only opened. A general view of the interior of the abdomen showed the presence of general peritonitis, with adhesions existing between the convolutions, very little fluid in the cavity, the livid look of intense inflammation over the whole of the peritoneum, visceral and parietal. The omentum was shriveled to an inch of irregular fringe across the upper part of the abdomen. The whole surface of the peritoneal membrane and the omentum was covered by countless little masses from the size of a mustard seed to that of a grain of wheat. These were too solid to be the ordinary product of inflammation, and a specimen placed under the microscope showed it to be tubercular.

Examination of the small intestine showed nothing worthy of remark. The appendix was a shriveled, knotted cord, less than two inches long, the caput coli was largely distended, being nearly or quite four inches in diameter, doubtless caused by a narrowing that existed, commencing at the sigmoid flexure and extending upward seven or eight inches, and diminished in calibre so as to no more than admit the finger. All along this portion it was thickened, indurated and contracted by inflammation, involving the whole structure—not alone the peritoneum, which elsewhere seemed alone affected, but the muscular and mucous coats as well. It was from this part, doubtless by rupture of a vessel by distension, when the last mass was voided, that the fatal hemorrhage came.

I am inclined to think that the tubercular deposit was one of the later occurrences in this case, as miliary tubercle of the lungs has often produced symptoms of acute pneumonia, or, possibly, during the progress of an acute pneumonia this form of tubercle has been deposited.

I also think that the large masses expelled were the result of a

long period of constipation and imperfect digestion, the large intestine becoming to a great degree sacculated, accommodating itself to the presence of the obstructions, and when they are suddenly, from any cause, removed, the newly exposed part readily taking on inflammation, or an already existing chronic inflammation suddenly taking the acute form.

ARTICLE II.—*Elixir Iodo-Bromide of Calcium Compound in Scrofulous Induration of the Nose.* By X. T. BATES, M.D., New Lebanon, N. Y.

Was called in February, 1872, to visit Mrs. R. Found her suffering from a troublesome tumor in the right naris, of some twelve months standing, so large as to disfigure the face, accompanied with intolerable burning and itching sensations, which had obstinately resisted every method of medication to which she had been subjected, which I learned comprised both discutient topics and alteratives, and anti-scrofulous remedies. I suggested the use of several lotions and internal medicines, no one of which she appeared inclined to favor, remarking, "it is almost needless for me to use that which has already proven worthless in my case—give me a new prescription." I then prescribed as follows:

R. Elix. Iodo-Bromide Calc. Co., - - - - - oj.

Sig. Take one teaspoonful one hour before each meal; after one week increase the dose to two teaspoonfuls.

This was sufficient to effect a cure which I will pronounce permanent, inasmuch as there has been no return of her difficulty since its disappearance nearly a year since.

I have no hesitation in pronouncing the elixir iodo-bromide of calcium comp., introduced to the profession by Tilden & Co., the most efficient and satisfactory anti-scrofulous preparation I have ever used, but the sphere of its usefulness is by no means confined to scrofula. Aside from this special usefulness it has an application as diversified as the term *alterative* can make it.

ARTICLE III.—*Poisoning from Corrosive Sublimate generated in the Mouth from Amalgam Plugs in the Teeth.* By J. PAYNE, D.D.S., Dwight, Ill.

Having been invited by an eminent gentleman of the medical profession to attend a convention of the State Medical Society, to submit to its consideration a matter of vital importance to the human family, and being unable to comply with the invitation, I have written this article to lay the matter before the medical profession and ask its co-operation.

The matter which I wished to bring to the notice of the profession is the poisoning of thousands of people all over the world from corrosive sublimate generated in the mouth from amalgam plugs in the teeth. Neither Asiatic cholera, nor small-pox, nor any malarious disease, is doing half the mischief in the world that is being done by this poisoning. Every medical man of any considerable practice has undoubtedly had numerous cases of it, but never knew what it was. The symptoms are so numerous and varied in different cases that it would be impossible to give them all in this short article, but I will say that a person poisoned in this way is liable to be treated for dyspepsia, neuralgia, paralysis, consumption, and numerous throat diseases. The patient gradually wastes away as if going into a decline, and no medicine will afford any relief. In many cases the difficulty steals on so gently as not to excite the least alarm, and continues very gradually for a number of years till the patient becomes a total wreck, while in others the attack comes on violently and the friends and attending physician think the patient is dying, but he will again rally and again be prostrated.

There is such a resemblance in the symptoms to nearly all the diseases to which human flesh is heir, that the physician is led to treat the patient for some disease which seems to be a very clear case, but his patient gets worse. In more than twenty cases that I have had, nearly all had been pronounced by some physician as having consumption. In nearly all the cases there are at times a very bad cough, eyes sunken, and haggard expression and deep blue or dark color under the eyes, invariably a metallic taste in the mouth, water flowing from the mouth in the night while asleep so as to wet the pillow, and in most cases extreme prostration.

I have not time now to detail the manner in which the corrosive

sublimate is formed in the mouth, further than to say that the quicksilver in the plugs is driven off by the heat of the mouth in very minute particles, and, combining with the chlorine in the fluids of the mouth, or any saline substance, such as our food, passes into the stomach, and produces slow poisoning. If the State Medical Society will appoint a committee to visit this place, I will show them several cases that will place the matter beyond controversy.

There are some twelve thousand dentists in the United States doing a wholesale business at this poisoning, and I ask the co-operation of the State Medical Society, as guardians of the public health, to assist in getting an act of Congress passed making it a penitentiary offense to place any poisonous substance in teeth that will injure the people.

ARTICLE IV.—*Bromo-Chloralum in Scirrhous Affections of the Stomach.* By X. T. BATES, M.D., New Lebanon, N. Y.

I desire to call the attention of the profession to the use of bromo-chloralum manufactured by Tilden & Co., simply as a palliative measure in cancer of the stomach, in which affection it has very recently proven, in my hands, of signal service in the case of M. B.,—male—Irish—farmer.

At the period of my first visit, in January, of the present year, I learned that he had been on the decline for a year or more, and at times a great sufferer, with progressive loss of strength and weight, until he was finally obliged to take to his bed altogether. The history and condition of the case were such as to leave no doubt as to the cause of his sufferings and of the ultimate result. I found him anæmic and emaciated, appetite impaired, with marked feebleness and lack of vital force, lancinating pains in the vicinity of the stomach, cancerous cachexia and occasional vomiting of purulent matter, with eructations so offensive as to demand imperatively some combative agent.

Having on several previous occasions satisfactorily tested the disinfecting virtues of bromo-chloralum in the sick room, and also demonstrated its unquestionably remedial properties in foul breath,

it occurred to me to make trial of it in this case—prescribing as follows:

R. Bromo-Chloralum, - - - - - - - dr. i.
Water, - - - - - - - - - - oz. i.
Ess. Wintergreen, - - - - - - - q. s.
Sig. One teaspoonful every four hours.

The effect was magical; the offensive factor at once disappeared, the nausea was controlled, the countenance became brighter, and for a short time the hopes of the patient were revived that ultimately he might be cured. The bromo was the only medicine that appeared to afford him any relief, and its use was continued up to the time of his death, happily subserving the purpose for which it was given.

Selections.

Nature and Treatment of Vaginismus. By Dr. Mack, of St. Catharines. Read before the Medical Society, St. Catharines.

This extremely annoying disease is so perfectly under the control of the surgeon, that it should be placed among the well recognized forms of complaint, for which his resources are called upon. Efforts have been made of late to call in question the propriety of Sims' or Simpson's operations, based doubtless upon cases of abuse.

Having operated in all, about ten times, I would now submit a condensed history of two typical examples of the disease and its treatment.

Mrs. G., married eighteen months, menstruation regular and normal except in being attended with some dorsal and hypogastric pain. Sexual intercourse extremely unpleasant and painful, yet tolerated, although with much repugnance; her husband complained to Dr. M. that his married life had been very far indeed from what he had expected it to be. Examination per vaginam proved to be very difficult from the great sensitiveness of the ostium vaginæ; examination by the speculum was not to be attempted without anæsthesia. The carunculæ myrtiformes and remains of the hymen were florid and large, but the seat of most

exalted sensation appeared to be at the fourchette, accompanied by spasm of the sphincter vaginæ. Examination under chloroform showed symptoms of endo-cervicitis.

The following day, full insensibility having been produced, I introduced two fingers of my left hand, and having divaricated them so as to put the parts fully on the stretch, I made two incisions so that they should represent the letter Y, the oblique part of the incisions commencing about two inches up the vagina, about one inch from the mesial line along the posterior wall, dividing the mucous coat, and after being continued to within less than one inch from the perineal surface, then carried straight in the mesial line, and dividing the soft parts freely for about half an inch from the raphe perinei the same oblique portion of the incision was then made upon the opposite side.

Pledgets of charpie soaked in a weak solution of persulphate of iron were placed in the incisions, and a compress secured by a T bandage; the strictest quiet and rest in bed were enjoined. Cold applications of lint, wet with iced water, were kept up, the bladder being relieved every eight hours by using the catheter. After forty-eight hours the dressings were removed, and one of Sims' glass dilators directed to be introduced occasionally, and retained for about two hours.

Four days after the operation, the use of the dilators proving extremely painful, full anæsthesia having been induced again, the remains of the hymen were carefully and thoroughly removed by a small curved scissors. No hemorrhage followed, and in about twenty-four hours the dilators could be tolerated. Two weeks after the first operation the local treatment for the inflammatory condition of the cervix uteri was commenced, and after about two months treatment a complete cure was effected, resulting in the birth of a healthy son in less than ten months. This case is one of the milder type; the next is a fair sample of the more severe forms of the disease.

Mrs. M., married about three years, without issue, declares that perfect connection has never been effected. Her husband has been morbid and unhappy, and the matrimonial alliance is likely to terminate in great misery for all parties. Examination per vaginam could not be thought of, the attempt was violently repelled by involuntary struggles. After inhalation of chloroform, examination disclosed the hymen partially ruptured, and the entrance of the vagina rigid, and small as in the virgin state; keeping up the anæsthesia the incisions were at once made as already described, and then immediately the remains of the hymen were carefully dissected away. Persulphate of iron was applied to the bleeding surfaces, and a small glass dilator was introduced and maintained by compress and bandage.

In twenty-four hours the dilator was removed, wet compresses were applied, and forty-eight hours after the operation a larger dilator was introduced for about twelve hours. From this time, for about fourteen days, the dilators were inserted, gradually increasing their size at intervals of about two hours, and retained about two hours each period. A speculum was then introduced, and local treatment directed to a slight endo-cervicitis, which yielded in the space of six or seven weeks.

The lady returned to New York, her residence, and in less than one year from that time, she gave birth to a fine healthy infant.

The first report of any treatment for this distressing neurosis is to be found in Burns' Principles of Midwifery, where, in the portion of his book assigned to describing the anatomy of the pelvis, and when treating of the pudic nerve, it is stated: "The pudic nerve, after re-entering the pelvis, gives off several small branches, which go to the obturator internus, sphincter ani, and extremity of the rectum. It then divides into two. The trunk as it may be called, runs forward with the artery to the clitoris, covered as it proceeds along the rami of the pubis, by the erector.

The other division is distributed to the perineum and vagina. It approaches the vagina nearly in a line with its junction with the perineum, and subdivides and ramifies on the end of that passage, but chiefly on its orifice.

This nerve is often preternaturally sensible, so as to cause great pain in coition as well as at other times. It may be exposed by cutting through the skin and fascia, at this side of the labium and perineum beginning in a line with the front of the vaginal orifice, and carrying the incision back for two inches. The nerve being blended with cellular substance, is not easily seen in such an operation, but it may be divided by turning the blade of the knife and cutting through the vagina to its inner coat, but not injuring that. It may be more easily divided by cutting from the vagina. Slitting merely the orifice of the vagina will not do. We must carry the incision fully half an inch up from the orifice of the vagina, and also divide the mucous membrane freely in a lateral direction.

In another place he tells us that the sensitiveness is sometimes dependent on little tubercles or inflamed patches at the orifice, in which case, we may try the free application of nitrate of silver with or without scarification.

But if there be no tubercles, and especially if there be tightness at or within the orifice, we must in one or more places divide the mucous coat, as high as there is anything like a band.

Dr. Neftel reports a case successfully treated by electricity.

Dr. Mahend also, in his book "*Sterilite chez la Femme*," reports a success from the same mode of treatment.

There are other cases of pain in coition, distinct from vaginismus which must be borne in mind, *e.g.*, painful affections of any of the parts adjacent to or contained in the vulva, inflammation of Bartholine's follicles.

The operation performed by me depends, I believe, wholly for success upon the after treatment, by keeping up dilatation, for all of which we are indebted to the practical ingenuity of Dr. Marion Sims.

I wish to be clearly understood that I do not advocate the performance of this operation in all cases of vaginodynia indiscriminately, but in cases where it is not due to hysteria curable by constitutional measures, or to fissures and sores of the vulva, eruptions or neuromata, vaginitis or metritis in any of its forms capable of treatment, locally or generally, or to tubercle of the meatus urinarius, but rather to those cases dependent upon spasm of the sphincter vaginæ with an excessively irritable condition of the nervous filaments. Emmett divides the fibres of the sphincter, and the tense corded band usually to be found at some part of the vaginal wall.

I do not think that vaginismus depends wholly upon spasm of the sphincter vaginæ, but upon pain in the faciæ and muscles deriving sensation from the branches of the pudic nerve and which must, of necessity, be divided and kept from re-uniting by the method of Sims.

Debout, Chamie, and Muhon, all recommend the operation as described by Burns. Simpson operated subcutaneously with a tenotome.

Menville de Pouseen recommends, when the affection will not yield to constitutional and local mild remedies, cauterization of the inferior portion of the vaginal orifice. Lisfranc reports a case cured by bougie. I have seen belladonna, atropine and the glass dilators succeed, but in our devotion to conservative surgery, we must draw the distinction between that and no surgery, and remember that the cruelty lies in losing time and creating suffering from months of futile efforts at gradual or forcible dilatation, or wearing out the patience of all concerned with quantities of medicaments consigned to the stomach, local baths, poultices or ointments.

Pregnancy would prove a sure remedy, but I think it likely that the indelicate proceeding of anæsthetizing a woman and leaving her to the marital embrace, as reported by another practitioner, would prove very difficult to reduce to general practice.

In conclusion, I would state that, with one exception, the cases I have met with were found among that class of society in which

the intellectual faculties are too often exercised at the expense or neglect of the physical.—*Canada Lancet.*

Some Conclusions in Regard to General Paresis, with the Report of a Case under Observation. By HORATIO R. BIGELOW, Boston, Mass.

A case of general paresis now under treatment, although only in the first of the three stages described by Calmeil, suggests a few conclusions in regard to some of the characteristic nervous phenomena which form a prominent symptom in the development of the disease.

First of the Case.—The patient is a man fifty years old, tall and stout; the forehead is very narrow transversely, depressed in the region of the spheno-frontal articulation and at the cranial and vertex; the face, when at rest, is entirely devoid of expression, the integumental folds are obliterated; the chin is corrugated from contraction of the levator-menti muscle; the complexion is sallow; the eyes are sleepy and dull, the pupil of the right being larger than that of the left, and dilating irregularly; there is an air of perfect placidity and great self-importance about the patient's demeanor; the appetite is almost voracious, at the same time that it is capricious; there is, also, occasional regurgitation of the food.

Local Alterations.—Muscles of tongue affected; there is hesitancy of utterance, inability to pronounce the labials correctly, a slurring, guttural manner of speech, but with no disposition to garrulousness, the patient recognizing his own defects; while giving utterance to certain words the head is thrown slightly upward, and the lower lip twitches spasmodically, conveying a peculiar motion to the chin; the tongue alternately contracts and relaxes when protruded.

Motor Functions.—Some of the local phenomena might point to a more advanced stage of the disease, were it not for the fact that the motor functions of the extremities are not perceptibly implicated; the patient's walk is a language of its own, it conveys the entire sense of egotistical importance, that entire indifference to other mortals which is so characteristic of the mental condition of the patient; the foot, but slightly raised from the ground, is advanced slowly, with but little flexion of the leg, and planted flat on the ground with a determined air.

Mental Condition.—There is unvarying contentment of mind, buoyancy of spirit, and unclouded hope; to an interrogation as to the state of his health, he would make reply, "First rate; never

better," etc.; he is fond of discoursing upon the extent of his business, his charming residence, and his family connections; he is contemplating a tour on the continent, with his family, to extend over a period of many months; his memory of past events is perfect, but he cannot remember the substance of what he has read five minutes previously; he has developed a decided tendency to kleptomania of late, using much ingenuity in concealing his depredations; he has great elation of ideas, and sees everything *couleur de rose.*

Ophthalmoscopic Signs.—Congestion (slight) of the disk.

I am aware that this case presents no features hitherto unknown to the profession, but it is an excuse for dwelling somewhat upon the value of the ophthalmoscope in the diagnosis of cerebral diseases, and for advancing a few theories in regard to the mental implications.

I am indebted to my friend Dr. R. A. Vance, an eminent practitioner of New York City, for the valuable data in relation to the ophthalmoscopic signs in general paresis.

"In every case of general paralysis that has fallen under my observation, the ophthalmoscope has revealed morbid changes of a vascular, neuritic, or atrophic character. In thirty-one cases of which I have notes of the intra-ocular appearances at the time I first examined them with the ophthalmoscope, eleven presented evidences of atrophy of the disk and surrounding parts of the retina, thirteen of neuro-retinitis, and seven of congestion of the disk and retina. Those cases in which neuritic and atrophic changes were marked were of long standing, while those in which vascular derangement alone was present were in the early stages of the disease. In three out of seven cases characterized by congestion of the intra-ocular structures, repeated ophthalmoscopic observations demonstrated the subsequent development of neuro-retinitis, which finally terminated in atrophy of the intra-ocular portion of the optic nerve. The rapidity with which the neuritic and atrophic changes succeed the congestive appearances bears no relation to the general progress of the intra-cranial disease, but seems to depend upon local causes which, as yet, have not been determined."

The "elation of the ideas" is due to a vicious action of the vesicular neurine of the ideational centres, rather than to an exaltation of the faculties of the mind. The molecular condition representing imagination undergoes a specific, minute change, by which its harmonious action with the centres of judgment becomes disrupted, and commonplace expression results. One of the first appreciable mental changes of general paresis consists in this perverted imagination, this intellectual feebleness; and from the consideration of these symptoms we are led to a probable location of the universal lesion. There is in this disease a very manifest

want of emotional control. Now, as emotion depends upon the sensibility of the vesicular neurine to ideas, and as the idea depends upon the impression made upon the supreme centres,* it follows that any molecular change of this latter will affect all the mental organization, since we believe that the human mind is the perfected harmonious *force*, generated by the ideational centres, and that this force will vary in intensity according as it is evolved by a more or less intricate arrangement of the cerebral convolutions, and from a small or large number of cells. The emotional aberration depends directly upon a degeneration of will, which we should expect to be the case, as no such abstraction of *the will*, apart from its mental relationship, has a recognized existence. That memory preserves its integrity to an advanced period in paresis may be due to the fact that the centres in which ideas are registered are the last to yield to the vicious action, or that the residual force of the previous normal condition thus stored up discharges with fidelity its routine of the past, without having sufficient vital organization to retain impressions of the present. Corroborating instances of this species of conservatism are by no means rare in the life of private practitioners, being frequently met with in the course of certain febrile and cerebral diseases. In every organic element of the body there is this registration of ideas, and the impression once made is indestructible; but as the integrity of action depends upon the harmonious assimilation of philosophical ideas, the retentive power may be perverted or obscured by an abnormal condition of the ideational centres. From the relation and assimilation of ideas emanate imagination, hence a vivid imagination would result from some molecular change in the centres generating the idea, while an unhealthy imagination would depend upon diseased action of those centres. Whether the paralysis precedes the mental degeneration, or is preceded by it, must, at present, be considered as *sub judice;* but I am inclined to believe that, in the great majority of cases, want of motor co-ordination is secondary to the nervous lesion. This supposition is based upon a knowledge of the intimate and dependent relationship of the sensory-motor and higher nervous centres. A disease of one centre, by a process of vicarious emigration, may convey its contaminating influence to a very remote cell, whose functions in the processes of life and thought may be of an entirely different nature, thus developing a complex irregularity out of the original simple lesion. Who shall limit the extent of power in the higher centres? or who can measure the dependence of the physical upon the psychical? The minutest polar change in the molecular arrangement of the vesicular neurine of these supreme centres is felt, sometimes inappreciably, throughout the human

* Maudsley's "Body and Mind."

organism. A prick of a pin conveys to a special department its sense of pain, and immediately a reflex action ensues in the member thus abused; but if disease interrupt the action of this nervous centre, anæsthesia of the parts supplied by it necessarily results, so soon as the primary residual force shall have spent itself. In those cases of general paresis in which it is asserted that the paralysis manifested itself primarily, it is more than probable that the mental lesion did exist, but manifested itself by such slight external symptoms as to have been overlooked.—*Canada Med. and Surg. Journal.*

Varicose Hemorrhage from the Cervical Zone of the Uterus, Complicating Labor. By GUSTAVUS C. P. MURRAY, M.D., Obstetric Physician to the Great Northern Hospital, late Senior Physician to the British Lying-in Hospital, and Vice-President of the Obstetrical Society of London.

The rarity of cases of this kind is, I think, sufficiently shown by the little, if any, mention that is made of the subject in most of the published works on Obstetrics.

Dr. M'Clintock in his "Clinical Memoirs on the Diseases of Women," draws attention to what he terms *Uterine Hematocele*, and gives the history of two cases, both of which I shall hereafter recite, to show the points of resemblance and difference between them and those I am about to describe.

Mrs. B., aged twenty-seven, first labor, full term of gestation. In a weak, feeble state of health, without much stamina, and of a nervous temperament. She was about to retire to bed, when, with little or no labor warning, she felt that blood was running from her. Not being able to obtain the services of her engaged medical attendant, her husband requested Dr. Kirby to see her. The summons was quickly obeyed, and on his reaching the house, he found the patient in bed, very weak and fainting, owing to the loss of blood that had taken place, and which was still going on. On making an examination he felt what resembled the edge of the placenta, rather high up, and without loss of time the vagina was carefully plugged, and all further bleeding arrested. The os uteri was only partially dilated, and the liquor amnii had not escaped. It being suggested that a second opinion should be obtained, I had the pleasure of meeting Dr. Kirby.

Between the time of being sent for and arriving, the patient had lost little or no blood, and had not experienced any decided pains. After consultation, I determined on removing the plugs to see if delivery was practicable, and found the os uteri fully dilated, the membranes tense, and very little hemorrhage going on.

I passed my finger as high as possible within and around the cervix, but could not pronounce what was felt to be any portion of placenta. A full dose of ergot was given, the membranes were ruptured, and the labor progressed quickly and terminated favorably. The child was born alive, and the placenta expelled shortly afterwards without further hemorrhage; but we had some difficulty in keeping up the patient's strength and heat of body. Having failed to recognize the case as an ordinary one of placenta prævia, or accidental hemorrhage, we were left in doubt as to the source of bleeding, though the feature of the substance felt naturally suggested the presence of placental tissue.

I heard no more of this patient until thirteen months afterwards, when I was again sent for by Dr. Kirby to see her. She was now in labor with her second child, and, as on the previous occasion, hemorrhage had again set in as freely as it had done in her first confinement, and without there being any appreciable pain—in fact, exactly as before. On arrival, I found that Dr. Kirby had thoroughly plugged the vagina, administered nourishment, and given a fair amount of stimulant. Her general state of health had considerably improved since her previous confinement, and therefore she was now better able to bear the loss of blood.

After waiting some little time by the bedside of the patient, we observed a small *continuous stream* of dark-colored blood passing from the vagina. There were also some slight pains, and the bleeding seemed to increase somewhat at the commencement of them. After removing the plugs, I instituted a careful examination, and on reaching the os uteri, I found it dilated to the size of a crown, the membranes unruptured, and the fœtal head presenting. The cervix felt *large* and *pulpy* at its posterior aspect, and was rather low down in the vagina.

Passing my finger as far as possible within the uterus, I carried it well round the circumference of the cervix, but could not meet with the least trace of placenta. I however felt at one spot, corresponding to the external portion beforementioned as large and pulpy, a swelling rugose in character, with its edges raised and thickened. Two fingers distinctly passed over and beyond this enlargement, and reached true smooth uterine tissue on all sides. This fact, with that of not being able to detach any portion of the mass from the uterine wall, put the possibility of its being placenta out of the question.

On pressure with the fingers the swelling yielded, and became smaller, or reduced in size, and the bleeding was noticed to lessen or cease, returning again when the pressure was removed, and the hand when withdrawn was covered with venous blood. Dr. Kirby repeated all that I had done, and the same results were obtained. As labor was advancing, and the fetal head making fair pressure downwards, thereby materially staying the hemorrhage, we re-

solved to let nature take her course, assisted only by ergot and occasional restoratives. But we agreed to pass a plug dipped in a solution of iron, to the bleeding surface, if the hemorrhage again became excessive. There was, however, no necessity for this, and the labor terminated in the usual way, and favorably to both mother and child.

This second confinement demonstrated to us the cause of hemorrhage at the first labor, and it became clear and convincing, that these two early attacks of severe bleeding arose from the same source in both labors, and were due to an unusual varicose state of veins at the cervix uteri giving way during the commencement of labor. Under the circumstances attending the first labor, it was difficult, if not impossible, to arrive at anything like a correct diagnosis; but at the second confinement there was more time and opportunity afforded, and I was at the onset greatly assisted by calling to mind the absence of the diagnostic points of difference between unavoidable and accidental hemorrhage, and having before me symptoms differential in kind. The treatment adopted in both cases was simple and efficacious, requiring compression from below at the early stage of the labor, and subsequently the head in coming down gave the pressure from above, commanding or keeping in check the hemorrhage. It is important to mention that this lady, fourteen days after her second confinement, had a smart attack of uterine hemorrhage, requiring the immediate attention of Dr. Kirby, who succeeded in arresting it only after the employment of the appropriate remedies for such cases. Dr. M'Clintock says—"Let us now turn to that very rare variety of thrombus, in which the lip, or the lower part of the cervix of the womb, is the seat of extravasation. To all such cases I would restrict the term *Uterine Hematocele.*" He then gives the two following cases; the first was brought before the Dublin Obstetrical Society in 1850, by Dr. George Johnston, and was as follows:—"The patient, a robust countrywoman, aged thirty-five, in her seventh pregnancy, was delivered of a female child, evidently some time dead, after an easy labor of four hours, the breech having presented. The placenta was expelled in about ten minutes. No hemorrhage or untoward symptom of any kind supervened, and everything went on favorably for the first three days."

On the fourth day Dr. Johnston was sent for in a great hurry, owing to a violent attack of hemorrhage. On seeing the patient within four minutes from the first gush of blood, he "found her lying on her back, countenance perfectly blanched, and expressive of anxiety, which, with her neck, hands, and arms, was bathed in cold clammy perspiration. No pulse could be felt at the wrist, and the bed was inundated with blood, which was still flowing from the vagina." After using every effort to control the hemorrhage and recruit the patient's strength with some amount of

success, the flooding recurred, and she fainted and rapidly sank. At the post-mortem the uterus was found well contracted. "On the left side of the cervix, about an inch from the os uteri, was observed a ragged, sloughy-looking opening, the edges of which were irregular, and of a black ash-gray color. This opening, which was large enough to admit two fingers easily, communicated with a cavity the size of a small orange. It seemed to be formed in the substance of the cervix, and its external wall was found to be the projecting tumor beforementioned, as seen from the outside." Dr. Montgomery, speaking of this case in the *Dublin Quarterly Journal*, 1851, says:—"A careful examination of the specimen convinced me that it was a case of thrombus, whose external envelope formed a thin layer of the uterine tissue, became gradually thinner, and finally ruptured."

Dr. M'Clintock's second case is taken from the writings of Mr. Roberton of Manchester. The patient was twenty-five years of age, third pregnancy, and delivered by turning in consequence of a hand presentation. The placenta was expelled without any unusual symptoms, and there was not much uterine discharge. On the eighth day after delivery she was seized with vomiting, and towards evening a sudden and very copious flooding came on; the quantity lost was estimated at two or three pounds. The hemorrhage appeared again after the lapse of two days to an alarming degree, and she died on the eighteenth day after delivery.

Post-mortem.—"Uterus not so much contracted as is usual. Near the neck on the left side, and between the folds of the broad ligament, there was some appearance of extravasation, and a sac partly filled with bloody pus was opened, which sac communicated by a large aperture with the general cavity of the uterus. On laying open the interior of the uterus there was the appearance of a deep excavation or ulceration, capable of readily admitting a finger or two, leading to this sac." Mr. Roberton "looked upon it as a partial rupture of the organ." "But," says Dr. M'Clintock, "there can be little doubt that this rupture of the uterine tissue was, in the first instance, the result of extravasation of blood into the muscular substance of the uterus."

Dr. Montgomery narrates the case of "a lady affected with varicose veins, which extended all up the lower extremities, and could be traced into the vagina, was delivered, after a natural and favorable labor, at midnight, but shortly afterwards a fearful rush of blood took place very unexpectedly, for the *uterus was well and firmly contracted.*" She became cold and pulseless, with no radial pulse for six hours. On examination, "in the situation of the anterior lip its substance felt as if broken up into a soft pulp, the consequence, as I believe, of the formation and rupture of a bloody tumor."

This patient ultimately completely recovered. In all the three

cases given, the hemorrhage took place after labor, whereas in those I now bring forward it was present only during the first stage of labor, with a repetition in the second case, where it recurred at the end of fourteen days, and thus far resembling the cases quoted.

In the first two cases referred to, both ending fatally, the mischief in the uterine tissue must have extended deeper and covered a much larger surface than it had done in my cases and in Dr. Montgomery's; and doubtless, owing to the softening and disintegration of the muscular wall of the uterus at the site of the thrombus, perfect and *complete* contraction, most probably, could not take place, and the hemorrhage was not permanently arrested—whereas in the other cases, fortunately for our patients, the varicose condition being of a less severe character, the hemorrhage either ceased naturally or yielded to the treatment resorted to. Another point having probably much to do with the ultimate result of the case, is the situation of, and period of labor when, the rupture of the varix takes place. My cases and Dr. Montgomery's illustrate, as far as I know, the most favorable conditions of an unwished-for accident of the kind; and happily many conditions have to exist, or combine as it were, before this dangerous and unforeseen hemorrhage can take place either during or after labor.

The existence of a varicose state of the lower extremities during pregnancy, especially if extending upwards to the vulva, should, I think, put the obstetrician on his guard, not only as to the possibility of the occurrence of the hidden source of uterine hemorrhage we have been speaking of, but also as to the chance of the sudden rupture of the distended veins in and around the labia. In a work published in Paris in 1807, "Traite d'Accouchements, etc., par C. M. Gardien, M.D.," under the heading "Des Varices," he says, "Those tumors formed by the dilatation of some engorged veins show themselves most frequently about the eighth or ninth month of pregnancy. They are to be seen in the labia, vagina, and even at the *cervix uteri*. In this last situation they seriously interfere with labor, and great care is required on the part of the accoucheur, for fear of their rupturing and causing fatal hemorrhage.

Dr. Gardien adds that nothing should be omitted to prevent rupture, and recommends during the straining efforts of labor that the veins should be supported or strengthened by means of one or two fingers; and after delivery plugging is the most suitable method of keeping in check the hemorrhage produced by the rupture of a varix of the neck of the uterus.

Dr. M'Clintock, in his concluding remarks on the subject, after saying that it is one of extreme interest, even in a purely practical point of view, and having strong claims on our attention, states—"I have shown that it has a close bearing upon three of the forms of hemorrhage incidental to child-bed, viz., hemorrhage in the

second stage of labor; hemorrhage immediately succeeding parturition; and secondary hemorrhage occurring some hours or days after delivery."

I would now, from the experience of the two cases I have brought before the profession, add a *fourth* and earlier stage at which this kind of hemorrhage may and has taken place—namely, during the *first* or *dilatation* stage of parturition.—*Obstetrical Journal.*

Phthisis as related to Syphilis and Scrofula. Prize Essay by H. C. Hand, M.D., of St. Paul. (From Transactions of the Minnesota State Medical Society, 1873.)

A number of writers and lecturers, men of authority in the medical profession, have at various times advanced an idea that a relation existed between some cases of phthisis and syphilis, or, as most of them have worded it, "between syphilis and tuberculosis of the lungs," the sharp distinction between tuberculous and non-tuberculous phthisis having become but recently generally recognized.

Scrofula and tuberculosis were also once described as not essentially differing from each other, but of late have been more or less separated.

Phthisis is no longer viewed as necessarily, or even generally tuberculous; and any relation of syphilis to phthisis has been scarcely more than hinted at, certainly not proved, if any steps, indeed, have been taken towards the proof. In this obscure status of affairs the following problems present themselves:

1. Does syphilis ever produce phthisis, and if so, is it a frequent cause?

2. Granted that it does, in what way, and what form, the tuberculous or pneumonic?

3. Are tuberculosis and scrofula closely allied, or even identical?

4. What connection, if any, has syphilis with scrofula and tuberculosis?

In the spring of 1870, beside many equivocal cases which were excluded from his note book, the writer had access to and partial care of fifty-five cases of constitutional syphilis; these were *all* examined as to the condition of their lungs, and the result is given in the following table. With a single exception, a case of chronic pleurisy (No. 27), the lung troubles have a history of having commenced since the initial sore, in most instances since the appearance of constitutional manifestations.

CASES OF SYPHILIS TABULATED WITH REFERENCE TO CONDITION OF LUNGS.

No	Time since Appearance of Chancre.	Stage.	Family History.	Condition of Lungs.
1	9 mos.	Secondary.		Normal.
2	3 yrs.	Tertiary.		Pleuritic Adhesions.
3	3 mos.	Secondary.		Normal.
4	4 yrs.	Tertiary.		"
5	13 yrs.	"		Pleuritic Adhesions.
6	4 mos.	Secondary.		Normal.
7	7 yrs.	"	Healthy.	Phthisis.
8	3 yrs.	Tertiary.		Normal.
9	4 yrs.	"		Repeated Pleurisies.
10	2 yrs.	Secondary.		Advanced Acute Phthisis.
11	.....	"		Phthisis.
12	15 mos.	Tertiary.		Normal.
13	1 yr.	Secondary.	One Sister Consump.	Phthisis.
14	3 mos.	"		Bronchitis.
15	7 yrs.	Tertiary.		Normal.
16	2 yrs.	"	Mother Consumptive.	" [Phthisis.
17	6 yrs.	"		Pleuritic Adhesions and Incipient
18	5 yrs.	"	Healthy.	Normal.
19	2 mos.	Secondary.		"
20	15 mos.	"		Phthisis ; Pleurisies.
21	1 yr.	Tertiary.		Normal.
22	6 yrs.	"		Phthisis.
23	5 mos.	Secondary.	Father & Mother Con.	"
24	9 mos.	"	Mother& Brother Con.	"
25	3 mos.	"	Healthy.	Acute Phthisis.
26	10 mos.	"	"	Normal.
27	2 yrs.	Tertiary.		Pleuritic Adhesions.
28	4 mos.	Secondary.	Healthy.	Acute Pleurisy.
29	2 yrs.	Tertiary.	"	Acute Bronchitis.
30	9 yrs.	"	"	Phthisis ; Pleuritic Adhesions.
31	4 yrs.	Secondary.		Phthisis.
32	20 yrs.	Tertiary.		Phthisis ; Pleuritic Adhesions.
33	2 yrs.	"		Normal.
34	2 yrs.	"		Phthisis.
35	10 yrs.	Secondary.	Healthy.	"
36	1 yr.	Tertiary.	Mother Consumptive.	Pleuritic Adhesions.
37	8 yrs.	"		Normal.
38	5 yrs.	"		Phthisis ; Pleuritic Adhesions.
39	7 yrs.	"		" "
40	1 yr.	Secondary.		Normal.
41	15 mos.	Tertiary.		Phthisis.
42	5 yrs.	"		"
43	3 mos.	Secondary.		Acute Bronchitis.
44	12 yrs.	Tertiary.		Chronic Bronchitis.
45	8 yrs.	"		Normal.
46	5 yrs.	"		Emphysema.
47	4 mos.	Secondary.		Phthisis.
48	3 yrs.	Tertiary.		Normal.
49	4 yrs.	"	Very Consumptive.	Phthisis.
50	1 yr.	"		Chronic Pneumonia.
51	1 yr.	Secondary.		Phthisis.
52	14 mos.	Tertiary.		Normal.
53	1 yr.	Secondary.		Phthisis.
54	8 yrs.	Tertiary.		Phthisis ; Pleuritic Adhesions.
55	14 yrs.	"		Normal.

It may be noticed that several of the cases, in which years have elapsed since the contraction of the chancre, are marked as secondary. By this is meant that no tertiary symptoms have appeared, not necessarily that the secondary still persist. In like manner active developments of tertiary lesions were not always present in the tertiary list, sometimes only their indelible footprints.

In seven of the above cases there was a coincidence of pleuritic adhesions and phthisis, the former either having ante-dated the latter, or being so extensive as to be incapable of being viewed as a sequence of it. These seven cases will account for the excess of diseases mentioned below over the number of patients.

In the fifty-five unselected syphilitic patients but twenty were found whose lungs were entirely sound, while there were twenty-four with phthisis in a more or less advanced stage. Twenty-four in fifty-five, forty-three per cent.! Surely a larger per cent. than is found in non-syphilitics, even taking into account the class of paupers among whom the observations were made. Here, then, is the first fact learned from the table, and we are now reasoning only from the table such as it is, although we might wish it fuller, larger, and more conclusive. *Phthisis is more frequent in syphilitics than in non-syphilitics.*

The only other lesion frequently noted was pleuritic adhesion in ten cases among the tertiary syphilitics, while in the secondary class no chronic pleurisies were found, but two cases of acute.

Let us review a few cases in detail in which a pulmonary trouble was superadded to syphilis, that we may attempt to gain some additional light from them.

I. Jane T., whose case was fully reported to the Society at its last Annual Meeting and published in the last volume of Transactions. While syphilis was running in her system a rapid and malignant course she was attacked by capillary bronchitis which led to lobular solidifications in the upper and lower lobes of both lungs. These solidifications were possessed of great firmness, and, although six months had elapsed between the date of their formation and the fatal termination, no attempt at softening was anywhere found.

II. Adam Jordan; æt. 24; colored; native of Alabama; had two chancres in March, 1869, and a non-suppurating bubo on each side. In the following July the lymphatic glands of neck began to swell, and in the fall a lichenous eruption covered the body. During April, May, and June, 1870, he was under observation, having the dark traces of his former eruption still remaining, and a fresh tuberculoid syphilide. The glands of the neck on each side, especially those below ramus of jaw, were enormously swollen, indolent and hard, the mass being larger that one's double fist. His condition remained essentially the same until October, 1870, when he slept on the floor of the ward and was attacked by pneumonia, of which he died at the end of six days.

Autopsy; 10 hours after death. Skin maculated. Neck slightly smaller than six months before. Broncial glands greatly enlarged,

grayish black, and of diminished consistence. Lungs: posterior portion of both, and apex of one, in a state of gray hepatization, being of a uniform gray color, heavier than water, not crepitating on pressure and readily breaking under the finger; pus exudes from the cut ends of the small bronchial tubes. In those portions of the lungs comparatively free from disease, separate and distinct lobules are found undergoing the same process as above. No tubercle in either lung.

Spleen: triple or quadruple its normal size, dark red, firm, and nodulated by numerous, superficial and deep, yellow deposits, varying in size from a pin's head to a small pea. Splenic tissue around these deposits firmer than elsewhere. Liver and kidneys normal.

The salient points of the above case are, the cheesy degeneration of the cervical lymphatics, some of which were ulcerated and discharging externally, the embolic patches in the spleen, and the acute lobular pneumonia.

III. Thomas G., æt. 35, a native of Ireland, and of intemperate habits, having no hereditary taint, and previously healthy, in Dec., 1869, after having been employed in the water lifting lumber for two months, noticed his legs becoming stiff and painful, but not swollen. He had palpitation of the heart, stitches in his side, and a short dry cough. The stitches in side continued, as well as the cough, which after five months became attended with copious purulent expectoration and a little blood.

October 25, 1870, the following note was taken. He denies ever having had a chancre, but says that one year ago spots appeared on the skin, the earth-colored stains of which remain; he has slight general adenitis; sternal tenderness; his throat is congested and the seat of some white cicatrices; he has stinging, burning pains in palms of hands and soles of feet; and *had* severe nocturnal pain in legs and darting pains in the forehead with flashes of light in the eyes, which have been greatly relieved by a fortnight's course of iodide of potassium. He is emaciated and feeble. The nails are clubbed. Heart palpitates on exertion, but is not increased in size nor the seat of any murmur. Lungs: percussion clearness is impaired all over the chest, and the respiration is harsh, with many large and small moist rales; over right lower lobe the percussion is dull, respiration feeble, and movements of chest wall diminished.

Dec. 13. The emaciation, prostration, and physical signs have been gradually increasing, within the past few days the abdomen has become distended both with gas and with serous effusion, and to-day death occurred.

Autopsy; 5 hours after death.

Heart: right side filled with soft, dark clots. The whole organ is small, pale and flabby; the connective tissue around its base is distended with serum, and of an amber color.

Pleural cavities: right, entirely obliterated by firm adhesions; left, free in portions.

Lungs: at apex of right, and at bases of both, are small portions of pulmonary tissue permeable to air; even these portions, however, are not free from a nodular deposit. All the remaining portions are firm, of a specific gravity equaling or exceeding that of water, of a grayish-green color, and scattered over with white granulations, which are clustered somewhat after the manner of grapes on their stem. In the centre of many of these granulations can be seen a minute point, either dark or bloody. By careful manipulation, a bristle can be introduced at these points and passed along the vessel, which, by tracing downward to the heart, is found to be a branch of the pulmonary artery. The lower lobe of right lung is greatly diminished in size by the encroachment of the solidified and enlarged upper lobe; the false membranes between it and diaphragm, and its own tissue, are the seat of softening, chessy masses. The apex of the left lung is filled with communicating cavities.

Bronchial glands: enlarged and firm.

Peritoneum: smooth and shining, its cavity contains one gallon of clear, straw-colored liquid, which, in a few minutes after removal, gelatinizes into large, soft clots.

Liver: normal in size, dark in color; capsule on upper surface of right lobe is white and thickened.

Spleen: normal in size, its capsule thickened.

From the history given by the patient, and the symptoms presented while under observation, little room is left for doubt that he was the subject of syphilis, and in connection with this we have seen that he had grayish-green lobular pneumonic solidifications, in some locations softening and forming cavities. The *character* of the granulations found scattered throughout the pneumonic tissue is worthy of being noticed here. From their gross appearance, and the fact that they clustered on and around minute arterial branches, the microscopical characters likewise supporting the view, the writer feels no hesitancy in pronouncing them tuberculous granulations; but from their insignificancy of number as compared to the extensive inflammatory lesions, and their pearly freshness and undegeneracy, he feels equally justified in viewing them as a secondary phenomenon, a complication of the phthisis.

IV. Emma S., æt. 18, of delicate frame, was born in a brothel, and at the age of 13 was forced by her mother into the same business that she herself was following.

In June, 1868, she suffered from a chancre, gonorrhœa and venereal warts; and in April, 1869, had the same troubles. In January, 1870, she renewed her gonorrhœa, and this had not subsided when she came under observation on the 1st of April,

1870. At this time her hair was thin and dry, the pharynx was congested, the supra-condyloid and post-cervical glands were enlarged, the lower piece of the sternum was tender, and she gave a history of repeated eruptions on the skin, and attacks of sore throat.

In September, 1869, she first noticed a cough, with pain in the chest, which has steadily grown worse. Feb. 1870, she commenced to expectorate freely. May 6, 1870.—All over the upper lobe of right lung the percussion is dull, the respiration is cavernous, and there are gurgling rales. Lower lobe of the same lung: dullness on percussion, harsh respiration, prolonged expiration, and large moist rales. Left side: clear on percussion, respiration puerile; at very apex of lung are a few moist crackles. She is weak, emaciated, has hectic fever, and is greatly racked and worried by her cough. On the 28th of the following August she died. At the *autopsy* the right lung was found reduced to nothing but a honeycomb of various-sized cavities. Left upper lobe the seat of many tuberculous deposits, and some cavities. Left lower lobe solidified, containing some tuberculous deposits. *No part of the lungs would float in water.* Pleuritic adhesions were abundant; the diaphragm was also adherent to the liver, and the false membranes were the seat of some miliary tubercles.

The history of this poor girl is duplicated in the writer's memory by at least half a dozen similar ones. Girls, thrown early on the town, have burned out their young vitality by unendurable excesses, have contracted syphilis, and before reaching the age of twenty-five have paid the death penalty by phthisis of rapid course. That the syphilis has borne a hand in the origin and progress of their ultimate destroyer, he feels that he cannot doubt,—still, a hand that is, perhaps, secondary in efficiency as compared with the necessary conditions of their lives, the excitement, dissipation, and excesses, the weariness of body, dejection of spirits, and anguish of soul to which they are daily subjected.

Need more be said, or more cases quoted, to make the proposition good, that *secondary syphilis predisposes the patient to acute inflammation of the respiratory organs?* Of the acute pleurisies there is no necessity of a fuller mention at present; not so the acute bronchitis, and the acute phthisis as connected with the acute bronchitis. The two cases of bronchitis in the table were of the larger tubes. Jane Thompson, (Case I,) had capillary bronchitis; and in more than one other case, of which we have no note preserved, the same tendency of bronchitis, occurring in syphilitics, to run into the finer tubes, has been noticed. In some cases, such as this, the effused products not being absorbed, are endowed with sufficient vitality to remain as firm, organized masses, becoming converted into solidified lobules. In another class of cases the effusion is that of an asthenic, a catarrhal pneumonia,

and has no tendency to absorption, while it is only capable of very imperfect organization: as examples, Cases III and IV may be mentioned. The non-progressive and feebly vitalized lymph begins to degenerate almost as soon as fairly effused; in its degeneration and destruction the original elements of the lung tissue are involved, and a proper example of acute phthisis is the result. Be it observed that *post-mortem* few or no miliary tubercles may be found, and these few secondary, the most prominent feature being the cheesy masses, called tubercle by the older pathologists, but now deprived of the title, and viewed as a lymph of asthenia and of low vitality; by some called scrofulous lymph. From this disease, characterized by the rapid melting away of pulmonary structure, nothing can be more widely distinct than acute miliary tuberculosis of the lungs, in which death takes place by a direct blow at the life force before softening and local tissue destruction have scarcely had a chance to commence. It appears to the writer that not even in the chronic forms of phthisis is the distinction between tuberculous and non-tuberculous so well marked as here, for the secondary deposition of miliary tubercles around a chronic pneumonia, will often obscure the true nature of the primary lesion. But in acute tuberculosis, death, as a rule, occurs before softening has had time to commence; while in the inflammatory effusions which end in acute destructive phthisis, the depositions are copious instead of miliary, and their *immediate* tendency is to perish and liquefy, in their death implicating and destroying with great rapidity all the infiltrated and adjacent pulmonary tissue, so that after a few weeks' course a *post-mortem* examination will reveal the former site of the lungs occupied by a honey-comb of cavities, the tuberculæ of which are themselves infiltrated and softening to such an extent that perhaps not a single normal air vesicle can be found.

Again, it is not to be understood that any exclusive or essential causative connection is claimed between secondary syphilis and acute pneumonic phthisis; their occasional, or even frequent, coexistence and apparent relationship are merely pointed out. The depressing influence of syphilis, together with an increased tendency, during its secondary stage, of the lungs to be attacked by capillary bronchitis and catarrhal pneumonia, is the nearest to a causal agency that can now be claimed for the disease. These catarrhal inflammations are essentially asthenic, and leave products in the air vesicles which are both incapable of absorption and of more than a very low organization; consequently they soften, destroy the adjacent structures, and become very properly classed under the head of phthisis of the lungs. The appearances found *post-mortem* in the lungs of Jane Thompson, were those more or less common to capillary bronchitis and lobular pneumonia. From her history, and the physical signs observed, undoubtedly her

trouble was originally capillary bronchitis, and this became subsequently the cause of the pneumonic—if you please—solidifications of the pulmonary lobules; to perplex ourselves further as to whether we shall use one name or the other in the classification of the disease with its lesions, would be useless waste of ink in drawing lines of distinction where no material difference exists.

Whilst it is not the purpose of the writer to make any dogmatical statements, it may be readily seen that the first two of the questions which were propounded at the outset of this essay have in his mind met with answers as follows:

1. Syphilis is quite a frequent cause of phthisis.
2. The form so produced is usually the pneumonic.

While the other two questions are included with less propriety in the consideration of the subject allotted for the prize essay, and therefore can claim only a brief notice, they are of such interest that the opportunity to say a few words concerning them will not be allowed to pass unimproved.

To the question as to whether tuberculosis and scrofulosis are closely allied, or even identical, there seems to be at present but the possibility of one answer. All the later pathologists have become convinced of the frequent succession of localized, and at times general, tuberculosis to scrofulous, cheesy degeneration. This opinion is based on the fact that tuberculosis of the internal organs has again and again been produced, under the observation of such men as Hoffmann, Lebert, Cohnheim, and others of the same stamp, by inoculation with cheesy detritus; and also by the frequent occurrence of miliary tubercles in the vicinity of cheesy depots in the lungs, lymphatic glands, etc.

Of those tubercles which are secondary to cheesy inflammations Rindfleisch speaks as follows: "The confusion of names and ideas which this distinction (between miliary tubercles and cheesy masses,) already founded by Reinhard, but strictly carried out by Virchow, has occasioned, is not decreased by the circumstance that in fact, cheesy inflammation and miliary tuberculosis very commonly occur side by side. The latest times have also brought very interesting disclosures on this point; namely, according to a series of investigations, which were started by Villemain, continued by Klebs and others, and brought to a certain conclusion by Cohnheim, the introduction of 'cheesy detritus' into the juices of an individual results in the occurrence of 'miliary tuberculosis.' It is, therefore, a matter of indifference whether the cheesy material is transferred by inoculation, or whether it arises in the organism itself. Accordingly, the smallest particles of the cheesy detritus would have to be regarded as a poison, which by direct irritation occasions the tuberculous new formation of certain constituents of the tissues. This much is certain, that the formation of tubercle is the expression of a commenced dyscrasia, a corrup-

tion of the juices, which in many cases diffuses itself from a point throughout the organism; while in others the dyscrasia is probably (?) already congenital."

That secondary miliary tubercles are produced by the absorption of cheesy particles, and their subsequent arrest in the form of emboli, seems, at first sight, the most probable explanation of the *modus operandi* of the cause under consideration: but such a theory is overthrown by the absence of occlusion of the vessels at the site of the tubercle, except rarely, and then as the result, not of an embolus, but from excessive tumefaction of the vascular walls.

That the infection, in some instances, is in no way conveyed by the vascular system, but is strictly a local contamination, is conclusively proved by a case related by Rindfleisch, in which a cheesy depot existed in one lung. Around this depot in the lung tissue was a brood of miliary tubercles. On the pulmonary pleura covering it there was a dense pavement of tubercles; *and on the costal pleura, opposing the pavement, miliary tubercles were scattered*, but in more moderate numbers.

This question, then, has answered itself, that there are certain differences of structure and progress between scrofulous lymph, or the "cheesy masses," and miliary tubercle, which forbid that they should be considered identical; while certain relationships of coexistence and causation force us to believe them to be very closely allied.

The same reasons which show tuberculosis to be allied to scrofula, with the same cogency prove it to be allied to all the other diseases which carry cheesy degeneration in their train. Let us mention typhoid fever with its cheesy depositions in the solitary follicles and Peyer's patches of the intestines, and the not infrequent cheesy degeneration of the enlarged mesenteric glands. Too often does tuberculosis of the lungs arise as a sequel of the fever, directly dependent for its origin on the cheesy detritus just mentioned.

Now, syphilis in its third stage is ever manifesting itself by gummy tumors which possess a strong inherent tendency to exhibit the cheesy metamorphosis, and when once that metamorphosis has occurred, the resemblance to the cheesy masses of scrofula is perfect, and they are equally liable to become the leaven from which miliary tubercles are propagated in various parts of the body. This, then, is the connection which syphilis seems to the writer to have with scrofula and tuberculosis. A relation, be it observed, which only distinctly shows itself in the tertiary stage of syphilis. A stage in which every thinking mind must have reflected on the exceedingly uncertain boundary which exists between the manifestations of syphilis and scrofula. While in hereditary syphilis we are sure still graver doubts as to the propriety of attempting to separate the two diseases have arisen; and

the sins of the parent have been traced in the snuffling nose or enlarged lymphatic glands of the wasted scrofulous child, almost as certainly as in the palmar and plantar pemphigus of early infancy.

The following extracts from a case published in the *Boston Medical and Surgical Journal*, for July 18, 1872, illustrate well the coexistence and interdependence of the phenomena of the diseases under consideration.

G. F., a colored laborer, having six years previously contracted the primary sore, was admitted to the Boston City Hospital. At the date of admission there was a sinus over the junction of coronal and sagittal sutures, discharging thin pus. This sinus led to necrosed bone, of which three pieces, each the size of a split pea, were removed. In the beginning of the second month of treatment a large cold abscess over the biceps of the arm was opened. A month later the right pleural cavity was found to be filled with liquid, giving rise to harassing cough, and sleeplessness from dyspnœa. The pulse continued above 100, and the appetite was greatly impaired. After a month the patient was convalescent, so that he walked about the ward. Soon, however, there followed extreme debility and diarrhœa; and the pulse rose to 136. The patient progressively sank, and at the end of four months from the date of entrance to hospital, died.

At the *autopsy* the following appearances were observed: In the *skull*, to the left of the median line, and a little anterior to the vertex, was an opening, one inch long by three-fourths of an inch wide, through which the dura mater could be seen. The dura mater was thickened, and slightly adherent to the pia mater, and the longitudinal sinus was somewhat constricted by this thickening.

The *tenth rib*, near its sternal end, was enlarged and necrosed, while in the adjacent tissue there was a deposit of *cheesy material*, in size about equal to a pigeon's egg. The articulating surface of the head of the right humerus was *necrosed*, as also were the glenoid cavity and acromion process of the scapula.

Both *lungs* were adherent to the thoracic walls, and in each pleural cavity there was a considerable quantity of serum. Each lung showed *scattered* deposits of *miliary tubercle*. Some of the bronchial glands had undergone *caseous degeneration*.

The *pericardium* was adherent in all its extent, and, with the deposit of lymph and false membrane, measured from one-fourth to one-half an inch in thickness. The muscular structure of the heart was thin. The valves were normal.

The *thyroid* and *thymus glands* were hypertrophied; each lobe of the latter was an inch and three-fourths long, and showed *cheesy degeneration*.

The *liver* presented two large masses of *cheesy metamorphosis*

near its surface, and two of smaller size internally. Small, puckered spots on its surface indicated the location of former disease.

The *spleen* contained a great number of large and small, deep and superficial, spots of *caseous degeneration.* Both *kidneys* showed signs of commencing parenchymatous lesion. The *mesenteric glands* were enlarged. In the small intestine there were several small ulcerations, and near the cœcum an ulcer of larger size. The solitary glands in the immediate vicinity of the ulcerations contained *cheesy deposits.*

Another case may be given from the writer's note book. Andrew S. died in 1870, after having for years been reputed to be suffering from syphilis. The basis for such repute seems to have been a sound one, consisting in blotches on the face, a severe and protracted sore throat, an offensive breath, and a worn and haggard appearance.

In Jan., 1872, the following note was made as to the condition of a son, 14 years old. He appears to have been unhealthy from birth, and for the last two years has had lymphatic enlargements under the jaw, above the clavicles, and behind the ears, which have opened and remain open as large ulcers with smooth, red and glazed bottoms and undermined edges, or have healed and left white, puckered cicatrices. From one ear there has been for the same length of time a free discharge of pus. His eyes have occasionally been crossed. At the date of the note he was suffering with fever, a violent pain in the head, and delirium. The forehead was wrinkled, and the patient constantly moaned in such a way as to direct attention to the head. Although there was no paralysis of the eyes, tongue, or other part of the body, nor any irregularity of the pupils, the symptoms were such as to warrant the supposition of sub-acute meningitis, very possibly induced by incipient caries of the bones at the base of skull. Under the use of iodine and good food, however, he improved greatly, and at the end of ten months his intellect is as clear as before the attack, and all the other brain symptoms have subsided.

Another son of the same father, seven years old, is almost blind from the presence of leucomata on each cornea, left by the healing of obstinate ulcers. While, beginning with the sixth dorsal vertebra and extending to the tenth, there is a well-marked antero-posterior curvature of the spine.

Such examples might be almost indefinitely multiplied. Thus, Dr. Parry reports in the *Medical Times*, June 1, 1871, the autopsy of a colored boy of seven years. Cheesy masses, which appear to have been degenerated syphilitic gummata, were found in the spleen and on the inside and outside of the cranium. The bones of base skull were carious. The bodies of the third and fourth dorsal vertebræ were entirely destroyed by caries and their place filled

by cheesy material. The cervical lymphatic glands were enlarged, the bronchial glands had grown to the size of a lemon, and were rapidly undergoing the cheesy metamorphosis. In the lungs, the spleen, and the membranes of the brain, were miliary tubercules.

That the views herein advocated are not too young to be true, is conclusively shown by the quotation given below from Benjamin Bell's work on the "Venereal." He says: "Where evident symptoms of scrofula have previously taken place, or where that disease obviously exists at the time, there is no great difficulty of convincing patients of any symptom of Lues Venerea with which they are attacked, being likely to partake of it; but they should also know that during the continuance of Lues Venerea, symptoms of scrofula frequently appear when that disease was not previously suspected to exist, and which might otherwise have never taken place. Of this I have met with many instances, where a scrofulous taint, which had till then remained concealed, broke out at once with much more violence on the system being attacked with Lues Venerea."

Niemeyer in his "Clinical Lectures on Pulmonary Phthisis," has said that "tuberculosis, in most cases, is a secondary disease, arising in a manner not known to us through the influence of caseous morbid products on the organism." The usual seat of such caseous morbid products is found to be in the lungs during the degeneration of chronic inflammatory deposits. In other cases we have to look for the *fons et origo* in the lymphatic glands, in carious bone, or, perhaps, in an exudation on the surface of the pleura or peritoneum.

When Niemeyer says that the worst thing that can happen to a phthisical patient is to become tuberculous, he utters the belief of all modern pathologists, and at the same time throws a strong light on the fact that tuberculosis is so often secondary. Why does it not occur in every case of phthisis which is in the stage of cheesy degeneration, as well as with every case of scrofulous lymphatics, and, indeed, whenever a cheesy nidus is found in any organ or structure of the body? It has been suggested, with a show of reason, that the increased growth of connective tissue around the caseous matter encysts it and prevents its exit. And this view is sustained by the fact, recognized since the time of Laennec, that a deposition of miliary tubercles often occurs a short time before death, when by reason of that softening and destruction of the lung which is very apt to occur in the last stages of the disease, the protecting barrier may be supposed to be broken down.

But what can be said of such an assertion as that recently made by Dr. Alfred Meadows, viz: that tuberculosis and scrofula are not identical, but in many respects *absolutely* dissimilar and to some extent *even antagonistic?* What, indeed, but that his experience

must then have been widely different from that of the majority of medical practitioners, and with them the writer.

As any essay is manifestly more directly valuable to the reader if it point its arguments by showing how a practical application of its theories may be made; and as this is all the more true in Medicine because of the too frequent doubts in which the practitioner is left to grovel after the proper and rational mode of treatment, this humble attempt to set forth some of the truths of the pathology of the broad subject considered shall be closed by one or two brief suggestions as to treatment.

It is admitted on all hands that the natural tendency of tubercle is towards death, not only the local death of the part in which the tubercle is located, but finally the death of the individual who is its unfortunate bearer. So long as tuberculosis was supposed to be capable of being produced *only* by the tuberculous diathesis, all attempts directed to the prevention of the deposition were necessarily considered as futile; while those who, like Dr. Meadows, think the scrofulous diathesis to be antagonistic to the tuberculous, if consistent, would encourage the former to prevent the latter. But, if tuberculosis may be caused by some malign influence which cheesy deposits are capable of exerting on the system, then riddance of the system of these foci of disease becomes our rational course. And when they are situated near the exterior of the body, as in the superficial lymphatics, or are associated with carious bone, what means is equal to the well-directed knife for their prompt removal? On this principle rests the recommendation which has recently been made that chronic lymphatic tumors, instead of being trusted to the slow efforts of nature at absorption, should be extirpated whenever and wherever such a proceeding is practicable. And on the same principle the success attained in restoring to health those afflicted with caries of the head of the femur, and of other bones, by a judiciously early excision, is explained; rather than as formerly allowing nature to work her tedious way towards a cure, the attainment of which would probably never be reached, because either the patient would succumb to secondary tuberculosis, or to amyloid degeneration induced by the protracted suppuration, before the desired cure could be attained. It has been a common observation that scrofulous children are safer from the supervention of pulmonary phthisis if their cervical lymphatic tumors suppurate and remain as open sinuses. And simply because the caseous material is thus freely cast out of the body, instead of being pent up and allowed full opportunity to contaminate the system. On the fact of the beneficial influence of *open* lymphomata over the life and health of the scrofulous sufferer, is probably based the opinion of *antagonism* between scrofula and tuberculosis; while in reality it is a strong argument on the other side, because the scrofulous pro-

ducts are thus cast out of the organism and prevented from working its general contamination.

In an essay on Phthisis presented to a Society, the climate of whose State is held in so high repute as is that of Minnesota, it might naturally be expected that climatic cure would have been the theme. Such a theme was avoided because it occurs to the writer that enough words have already been spilled in lauding our climate. Facts must now be collected, and they can alone convince the world that what has been already said and written has been put forth in good faith.

No one conversant with the exhilarating, vitalizing character of Minnesota air can for a moment doubt that it is capable of rescuing from the grave the incipient consumptive, or him who is about to become a consumptive. Let the last paragraph of this paper, then, point the lesson that here may also be found a balm to heal the sorrows of the one who is reaping the late fruits of early transgression, and to mitigate the penalty of the child on whose innocent head is being visited the sin of the father.—*Northwestern Med. & Surg. Journal.*

Clinical Lecture on Bed-Sores. By Sir James Paget, F.R.S., etc., Lecturer on Clinical Surgery at St. Bartholomew's Hospital.

Bed-sores may be defined as the sloughing and mortification or death of a part produced by pressure. When we press on any part of our bodies for a moment, on the removal of the pressure the part is quite white, owing to the blood having been pressed out. The color immediately returns, however. In bed-sores, the pressure is continual, the blood is driven away, nourishment ceases, and death of the part takes place. There are three different forerunners of bed-sores. 1. Inflammation; the prominent parts, *e.g.*, the sacrum, posterior superior spine of the ilium, the trochanters, and the ends of the spines of the vertebræ, are seen to be red. 2. They may be simply pale and white. 3. They may be purple or yellow, from the extravasation of blood or bloody fluid. Sloughing follows these in the skin and subcutaneous tissue and fat. These latter die before the skin, sloughing proceeds faster in them, and so when the skin comes away, the place formerly occupied by these tissues is empty. Then the deeper parts die—muscles, bone, until sometimes the spinal cord itself is exposed. Now, bed-sores occur in those who are absolutely at rest. If there is the slightest movement from one side to the other, bed-sores may be averted. A man with simple fracture of the femur, previously healthy, can move himself slightly from side to side, and does so instinctively.

No man with simple fracture of femur ought to rise from his bed with a bed-sore. It would be the consequence of gross neglect if he did. In the case of those whose lower limbs are paralyzed, there can be no motion whatever, and so they are liable to bed-sores.

The time when bed-sores begin to make their appearance is about fourteen days — that is, in the case of a healthy man who is absolutely unmoved. They will, of course, be accelerated by dirt, if his urine and fæces are not constantly removed. There are certain cases which are specially favorable for bed-sores: the old, especially those with fractured neck of femur, and those that are the fattest and heaviest, and most likely to become œdematous. Among ordinary persons, those that are the thinnest. When, as is commonly said, their bones are ready to start through their skin, the amount of tissues between the skin and projecting point of bone is so small that it soon, as it were, wears away, and bed-sores ensue. Those again in a state of fever, such as the lowest kinds of typhus, can scarcely by any means be saved from them. Their whole system is so poor and degenerated that sloughing takes place without any pressure at all; and you may see the ends of the nose, ears, etc., sloughing from the bad supply of blood. Continuous hectic fever is a state in which they appear, being an exception to the general class of consumptive patients, who, though they may lie in bed for months, rarely have bed-sores. They manage to move slightly and thus avert them. Pyæmia is another source, and is illustrated by a case in the Hospital: a man who was admitted with phlegmonous erysipelas of a limb and was treated for it. On account of some misconduct he was discharged: after a while he came back with pyæmia and an enormous bed-sore. His skin is very pallid and soft, and does not properly discharge its functions, and there is every reason to believe that every other organ of his body is in a similar state. His lungs may be auscultated and his urine examined, and nothing at all found wrong with them, and yet I venture to state that neither the lungs nor kidneys are performing their functions as they ought. A pyæmic subject, being so ill-nourished, is especially liable to bed-sores. Intense fever is also a productive agent. The man whose thigh was amputated a short time since, had a most acute and intense attack of fever, and large bed-sores appeared. Now the fever is gone, the local disease is removed, and the bed-sores are healing very rapidly. The risk of bed-sores in the old with fractured neck of femur is chiefly in the first week, therefore treatment with a view to preventing them should commence immediately the patient takes to bed. After the first week the risk is not nearly so great. There is one peculiar class in which bed-sores rapidly appear, and that is rapid destruction with inflammation of spinal marrow. If in a fracture of the spine, a portion of the spinal cord below the

seat of fracture be irritated and inflamed, sloughing will ensue in those parts to which the nerves given off below the irritated part proceed. And this will take place in two or three days. Sir B. Brodie mentions a case in which a large slough formed on the heel in twenty-four hours. No doubt there were other causes for this. Two or three days is the usual time. The same takes place in diseases of the spinal cord, especially in acute pyelitis. There is not so much risk of sloughing in parts deprived of nerve force as in parts whose nerve force is irritated and disturbed.

Now let us look at the means of preventing bed-sores, for nine-tenths of your care must be devoted to this; for if once they appear, it is very difficult to get rid of them.

First of all, look to the bed. Good bed-making is an indispensable thing in the prevention of bed-sores. Several beds have been made especially for this purpose, of which the best is Dr. Arnott's. It consists of a chest full of water; on the top of this is a water-proof sheet, and over this an ordinary sheet on which the patient is laid. Here the patient is absolutely floating on water. The waterproof sheet is not drawn tight, but adapts itself to every part of the patient. A patient might lie on this for years and never have a bed-sore. Inferior to this, but very good, is Hooper's bed. Here the waterproof on the bed is tight. They will avert bed-sores for a long time, but I should not like to say that a patient would never get a bed-sore on them. But you cannot have these everywhere; you cannot take them about to every one who may need them, and there are many cases in which they cannot be used at all, as in cases of fractured neck of femur, acute inflammation of knee-joint, and many others.

In ordinary beds the best thing is an ordinary firm mattress of horse-hair; and it must rest on boards. Cords are the worst possible things, as after twenty-four hours or so they give under the weight of the patient, and the most prominent parts are pressed upon. Iron gives after two or three weeks. Not so boards. It must be quite level. Under the horse-hair it is better, if possible, to have a spring or straw mattress. Feather-beds and the like are, of course, to be utterly condemned. If possible, have two beds, so that you may lift the patient into the other when it wants making. You thus avoid making beds under him.

The next thing is to harden the skin. The best application for this is a solution of one part of nitrous ether in three of water. If the back is frequently washed with this, bed-sores may be completely averted. There is in the Hospital a man paralyzed in his lower limbs; he has been in this state for ten months. By the good nursing of the sister of his ward bed-sores have been keep away. This application of nitrous ether has been used: solution of one grain of perchloride of mercury, with two drachms of nitrous ether, and six ounces of water, is another good thing. Whis-

ky is used in Scotland, as is brandy sometimes in England, but these are not so good. In Germany they use a solution of tannic acid. When the parts look as if they were going to slough, these spirit applications may be too strong, and then a solution of gutta percha in chloroform is very useful. Next we have to prevent pressure on those parts where bed-sores are likely to occur. These are the middle line of the sacrum, after that, in thin persons, the posterior superior spines of the ilium and the sacro-iliac articulations, then the trochanters of the femur. The chief thing is a frequent change of posture. If a patient can lie in four different positions during the day, bed-sores may be prevented. He may lie on his back, each side, and on his face. Of course, you could not make a stout person lie on his face; he would simply suffocate.

This change prevents the gravitation of the blood. This may easily be seen by looking at the back of a subject in the post-mortem room. The back is quite red from this cause.

When patients lie on their backs they may be saved for a time by dividing a mattress and leaving a space of six inches between the halves. You may thus save the sacrum, which will have no pressure on it. The case before referred to was treated so, but sores came on the ilium and trochanters.

Large cushions made of amadou in the shape of a horse shoe are very good. Isinglass plaster or felt water-pillows and pads of cotton-wool may also be used with advantage. In speaking of the mode of curing bed-sores, already formed, let me remind you to continue your preventive treatment just as if there were none, lest they come in other parts.

During the sloughing there is nothing better than a poultice of equal parts of linseed and bread, and enough charcoal to have a deodorizing effect. Carrot and turnip poultices are also deodorizing, but they are not so good as the first. The poultice is best spread on ordinary tow. When spread on linen, etc., folds are liable to form, and if the patient is on these they promote the bed-sore. When slough begins to separate, the resin or other stimulating ointment should be spread on the surface of the poultice.

When the slough has separated, the sore should be dressed with resin ointment or Peruvian balsam, or equal parts of these, in the following manner: little bits of cotton wool should be slightly spread with the ointment, and put into the sore until it is quite full. They thus make an equable soft surface for the sore. These are the chief local means for curing bed-sores. As regards internal treatment, do not stimulate. Let the diet be gentle but good; plenty of milk and bread; little or no meat, and a small quantity of wine.—*The Students' Journal.*

The Death of Baron Liebig. By Professor Charles A. Joy.

The death of Baron Liebig will create a profound sensation throughout the civilized world. No scientific man was better known, and none had rendered a greater service to the popularization of knowledge than he. Wherever books are read and journals are printed, his name has become familiar as a household word, and his opinion has always been regarded as worthy of the highest authority. The part played by this distinguished chemist is worthy of something more than a passing notice, and I propose to address myself to the task of giving some account of what he has done.

Justus Liebig was born in Darmstadt, May 13, 1803. His parents were poor, and, if it had not been for Government aid, he could never have sustained himself at school, but would have been compelled to learn a trade. The boy early developed a taste for natural history, and his father encouraged this indication by permitting him to study under the direction of a pharmacist in a neighboring town, but a desire to obtain a more thorough education, prompted young Liebig to apply to the Minister of Instruction for assistance from the public fund. I have heard him relate his experience with this high official. When he applied at the palace, it was only after repeated efforts that he was permitted an audience, and, at the first interview, the minister declined to grant the request; nothing daunted, he kept on repeating his calls until the officer, in self-defense, was compelled to put the boy on the stipend. In this way Liebig gained admittance to the Gymnasium, and was able to go through the preparatory course for admission to the University. While at the Gymnasium, he and another boy fell into considerable discredit with the director for presuming to develop tastes for something besides the classics. The director was in the habit of asking the boys what they intended to be if they lived to grow up, and when he came to Liebig, he invariably received the answer: "I intend to be a chemist;" whereupon the pedagogue would say, "You stupid boy, there is no such pursuit as chemist;" to the other lad, who desired to be a musician, he could hardly give a similar answer, although he assigned to both of them places at the foot of the roll. Liebig told me that many years afterwards he came across his companion in disgrace, and found him to be the most popular musical director in the city of Vienna.

Having completed the course at the Gymnasium, Liebig studied at Bonn and Erlangen, and subsequently received the degree of Doctor of Philosophy and Doctor of Medicine. In the early part of 1823, when only twenty years of age, he went to Paris, hoping to obtain access to the laboratory of Gay-Lussac (born 1778, died 1850); it was a hazardous thing for a poor student to undertake,

but he felt that work was in him if he could secure an opportunity to bring it out. The early stages of his career in Paris were the most trying of his life. Without money, without patronage, with nothing but youth and a resolute will to sustain him, his case appeared to be forlorn in the extreme, and he was wont to say that his whole career might have been cut short, and his name never have become known, if it had not been for the fortunate acquaintance of Alexander Von Humboldt, formed at a meeting of the French Institute. Gay-Lussac was much interested in the subject of cyanogen, and young Liebig had prepared compounds analogous to the cyanides, in which he thought he had discovered a new acid. One of the members of the Institute promised to read his paper on the subject and exhibit the specimens, but, like the Minister of Instruction at Darmstadt, it was only after repeated warnings and entreaties that he consented to keep his engagement. The subject was finally presented, and attracted considerable notice. After the adjournment, a gentleman whom Liebig did not know, came up to the table to speak to him and to inquire into his history, and, being pleased with his intelligence and modest deportment, invited him to dinner.

Young Liebig was too much embarrassed to ask the name of his host, and as he left the house inquired of the doorkeeper who that gentleman was. The doorkeeper replied that a good many persons had passed out, and he could not say to which particular one he referred; moreover, as Alexander Von Humboldt had just returned to Paris from a long journey, very few persons were aware of his presence in the city. Liebig could not keep his appointment with Humboldt, as he did not know where to go, but as soon as he learned the name of his benefactor he at once called on him, and from this acquaintance with Humboldt he dates the commencement of his prosperity. Upon Humboldt's recommendation, Gay-Lussac received Liebig as a pupil in his laboratory, and the two remained ever afterwards firm friends. The fame thus early acquired by Liebig soon reached his native land, and he was invited in 1824, at the early age of twenty-one, to accept the chair of chemistry at the University of Giessen. This university was destined to become the principal field of his usefulness and renown. It was here that he established his celebrated school of chemistry, and it was in the laboratory, built under his direction, that he made the researches which have so greatly enriched our knowledge and been of such vast importance to the well-being of mankind. At this early period there was no school for chemistry in the world. There were private laboratories where a few favored students could obtain instruction, the most celebrated of which was in Sweden, under the direction of Berzelius, but such an institution as a school for chemistry was unknown until founded by Liebig. If Liebig had conferred no other benefit upon the world than this

one act of establishing a systematic course of instruction in chemistry, it would have been sufficient to establish his claim to a prominent place on the list of benefactors of the race. The school was a means to an end, and enabled him to carry out the investigations and researches which have proved of so much importance to the progress of the science. The laboratory of Giessen became a hive of busy workers. Hoffmann, Strecker, Will, Fesenius, Whitney, Gibbs, Horsford, and a host of others, here laid the foundations of their knowledge and subsequent fame. The Giessen school served as a model for similar institutions all over the world, and the way having been once pointed out, it was rapidly followed and considerably improved as the years rolled by. Plans of the laboratory were engraved to supply the constant demand for them, and architects were sent from many countries to study the new arrangements preparatory to their construction, at distant universities and schools. Although numerous modifications have been suggested by experience, yet, upon the whole, the original plan of Liebig has been retained, in a majority of laboratories, with such changes as modifications in the construction of furnaces, the introduction of gas and improvements in apparatus, may have required. There is no question that while laboratory practice was of great value to students, the work accomplished by some of the more advanced scholars was of equal service to Liebig in enabling him to institute numerous researches which it would have been physically impossible for him to accomplish alone. It was sometimes necessary to make a large number of analyses in order to ascertain the accuracy of methods or to prove the correctness of theories, and in the early stages of chemical research, much more of this work was required than at the present time. In the course of time a rich store of observations was accumulated at the Giessen laboratory, which became available to chemists elsewhere, and this supply of material has since been largely added to by other laboratories in various parts of the world.

Liebig's industry in the preparation of original papers and in the publication of books was remarkable. The number of independent articles published in various journals does not vary far from 350, and his books, from his "Introduction to Organic Analysis" down to the last edition of his great work on "Agricultural Chemistry," number about thirty volumes. In addition to this, he did a great deal of editorial work upon Geiger's Handbook, the yearly reports on the progress of chemistry, the annals of chemistry and pharmacy, and the scientific journals of the day.

The great aim of Liebig was to popularize science. To this end, he wrote his famous "Letters on Chemistry," which first appeared as an extra sheet in a weekly newspaper, and were afterwards collected in book form, and translated into every European

language. No letters have been more generally read or have excited greater popular enthusiasm than these. They are perpetually quoted and criticized, and thus their subject matter has been presented in a great variety of shapes, until the views originally held by Liebig have been unconsciously everywhere adopted, although he himself greatly modified some of them, as subsequent research shed new light upon the subject. It has been said that Liebig was very hasty in drawing conclusions from imperfect premises. This may have been in a measure true; and when we consider how numerous these theories were, it is surprising that more of them were not overthrown. If Liebig was hasty in expressing an opinion, he was equally ready to retract when convinced that it was erroneous. I once had a conversation with him on this point, and he spoke of the fear some scientific men had of being caught in a mistake. He considered errors inevitable and inseparable from the accomplishment of any scientific work, and it was on this occasion that he made the oft-quoted remark, "show me the man who makes no mistakes, and I will prove to you that he does nothing." It is easy enough for a scientific man who publishes nothing, but only criticizes others, to escape the charge of committing errors, and for such persons Liebig entertained a wholesome contempt. What he desired, above all things, to know, was the truth, and when he thought he had discovered it, he was anxious to give the benefit of it to the world. It would occupy too much space to undertake to give a history of the work accomplished by this great man. The chief points of it can, however, be compressed into a small compass. He pointed out the way to conduct the analysis of organic bodies, and to establish for them rational formulas. In conjunction with Woehler he accomplished the synthesis of organic bodies, and thus did what Berzelius pronounced to be impossible. He introduced chemistry into the study of physiology, and thus created a revolution in that branch of science, and in the department of agriculture did more to place that pursuit upon a scientific basis than any man who had preceded him.

Pharmacy, physiology, agricultural and synthetical chemistry, owe a tremendous debt of gratitude to the illustrious Liebig. After devoting nearly thirty years unremittingly to the Giessen school, Liebig received a call from the King of Bavaria to go to Munich. In 1852, on the occasion of a visit I made to him, in company with Professor Henry Rose, I found him engaged in packing up his papers, preparatory to removal to Munich. His favorite pupil, Professor Hoffmann, now in Berlin, was assisting him in arranging his letters, and on the occasion of our visit Liebig read to us a number of letters he had received from Berzelius, which showed the sincere respect the great Swedish chemist entertained for the man who had not been his pupil, but whom he looked upon

as a most worthy colleague. Liebig subsequently accompanied us to his laboratory, where he exhibited to Rose a number of delicate tests he had just discovered. Liebig was very loth to leave Giessen. The inhabitants had shown their appreciation of his worth by presenting him a valuable house and garden, and it was here that his children were born and his fame as a chemist had been established. The necessity for such rest as could only be attained by a change of residence was, however, fully impressed upon him, and he decided to accept the invitation of the King of Bavaria. After going to Munich, Liebig only received such pupils as could aid him in his researches. The work that chiefly occupied him, was a careful revision of his book on Agricultural Chemistry, a controversy with Pasteur on the subject of fermentation, and the introduction of extract of beef, as a cheap food for the poor. A desire to benefit his fellowmen characterized the labors of Liebig during the last years of his life. The study of a method of silvering glass was instituted out of a wish to rescue from disease the poor victims of mercury poisoning, who were engaged in the manufacture of quicksilver mirrors. The extract of meat he hoped would secure a cheap and wholesome food for the poor, and furnish an invaluable remedy for invalids and convalescents. Latterly his mind was full of similar schemes of beneficence, and his last publications all look to the dissemination of correct scientific information on the common affairs of life. It ought not to be forgotten, in this connection, that Liebig was the first person in Europe to prepare chloroform, and it was he who discovered the hydrate of chloral—the two great anæsthetic and hypnotic agents now so largely employed to alleviate the sufferings of mankind.

In his personal relations I have always found Liebig to be full of urbanity and hospitality. I am aware that many Germans complained of his imperious and haughty manner, and he was often assailed by disappointed chemists on this score, but to any one really in earnest, he always appeared to me ever ready to lend a helping hand. He was a man who kept up with the literature of the day, and could converse fluently and well on any of the topics likely to be presented in the high circles in which he moved. Every summer he was in the habit of going to some quiet place among the mountains for relaxation, and on these occasions always contrived to make up a whist party of the most distinguished professors in Germany. I once spent a week with one of these parties when it was composed of Liebig, Woehler, Clausius, Schoenbein, and Hans Christian Andersen, and it was pleasant to see men of such renown in their moments of rest and recreation. The liveliest of them all was Schoenbein, but Liebig was equal to any of them in repartee and anecdote. It was on this occasion that Liebig related to me many of the incidents of

his life which are recorded above. The scientific men who were the contemporaries and fellow workers with Liebig, have nearly all passed away. Henry Rose, Mitscherlich, Erdmann, Magnus, Gmelin, Haidinger, Schoenbein, Faraday, Oersted, Pelouze, have ceased their labors, and there remain Woehler, Gustavus Rose, Poggendorff, Mulder, Dumas—not lingering superfluously on the stage, but still actively engaged in the promotion of scientific knowledge.

A new generation is springing up, to whom Liebig has left a legacy of inestimable value in the example he has set of obstacles overcome, of work accomplished, and of benefits rendered to his fellowmen. At the good old age of nearly three score years and ten he has been gathered to his fathers, honored and loved by all who knew him.—*Journal of Applied Chemistry.*

Sanitary Statistics of England. By T. D. Crothers, M.D., of Albany, N. Y.

The Registrar-General's annual summary of births, deaths, and the causes of death, for 1872, in London and other large cities of England, contains many suggestive facts, which are very interesting in view of the recent prominence of sanitary science.

The author discusses the social and economical advantages of large cities, as centres of civilization, showing that there are no evidences of deterioration in the inhabitants; but there is a limit to the growth of every city, similar to the growth of organic forms. This limit of extension depends more upon the species than space or time. Some of these limits may depend upon the supply of water, fuel, and food, or security from enemies, or the attractions or want of attractions for business, health, and pleasure. One prominent cause of the limitation of cities in Europe is their unhealthiness. For two centuries London was literally "a city of plagues," and truly called the "grave of the nation." There is a physical limit to the number of people who can live on a given space. But this varies in London, Edinburg, and on the Continent, where lofty houses, extending up many stories, increase the number of people to a dangerous degree. Happily this system has not prevailed to a great extent. The entire population in England is less than one person to an acre of ground. In twenty of the large towns of the kingdom the population was twenty-nine to the acre. In London it is forty-two per acre. This varies from seven to four hundred and twenty-nine in different districts. The limit of one hundred and fifty seems to have been seldom exceeded during the last ten years, in sections where the population has become denser. In nearly all the sections where the numbers were greater, they

have diminished steadily. The well-established law, that the insalubrity of a place increases with the density of its population, and that fevers generated in crowded dwellings have a tendency to spread among the whole of the population, is true in London. The mortality in different districts varied from fifteen to twenty-nine in one thousand. The author points out the dangers in the outlying districts of London, which are imperfectly supplied with water and proper sewers. Over a million of population are without the proper sewerage area, and from this source London has more cause for fear than from any other.

This is true of many American cities, and is the fertile source of many epidemics and fevers. The author also urges that the municipal rule should include all the suburbs, supplying them with water, sewers, and sanitary supervision, then the mortality would diminish to twenty or less in one thousand. The mortality in London averaged twenty-one during the year. The maxima of mortality were in the coldest and hottest weather—January and August. This law prevailed to a large extent in all the towns of the kingdom. Diarrhœa was the most fatal prevalent disease in London; whooping-cough, small-pox, measles, and fevers, were the next most prevalent and fatal diseases. The deaths from violence have increased largely during the year. This is probably due to the carelessness of street drivers, and reckless disregard of crowds. Deaths from burning have declined unusually. The American reader will be surprised to learn that a very small proportion of violent deaths are from "gun shots." In our larger cities this is the most prevalent cause of violent deaths. The tables of death from fever show that fever matter (Typh) has an independent life of its own, and undergoes periodical developments. A history of thirty years back indicates successive years when fevers have been extremely prevalent and fatal. In 1864 it was epidemic, but in 1872 it had fallen to a low ebb. Three kinds of fever are prevalent over England—typhus, typhoid, and relapsing fever. Typhus has declined rapidly since 1869; typhoid has also declined, only more slowly, and relapsing fever remains about as before. In public institutions one person in every six dies, and this is increasing. In the hospitals more are dying, and fewer in workhouses and prisons. This is significant, and is explained by a late American writer to arise from the imperfect ventilation and the poisonous surroundings of these old hospital buildings, many of them over half a century old. The same writer claims that no hospital building that has been occupied over ten years is a proper place for sick persons. The walls, notwithstanding all fumigation, will retain poisonous fever germs and other dangerous animal matter. Mortality statistics of London, from 1840, indicate about 24 per cent. per one thousand. Divided up into five districts, in some an increase has been noticed, in others it has diminished.

Altogether the mortality has decreased at the rate of from one to one and a half per thousand; considering the steady increase of the population, this is very gratifying. The author says "disappointment may be felt that the mortality has not gone down to twenty per thousand permanently, but the reason is obvious, viz.: the water supply comes from the upper Thames, which drains a populous basin into which much impurity flows, and much of the sewerage is imperfect; these contribute to keep up the mortality. The low death-rate of last year is a favorable omen, yet the sanitary work of London is far from being complete. The mortality in the larger towns and cities of the kingdom is, in the aggregate, much higher. "In three cities where the population is very dense a high rate of mortality followed." "Density raises the mortality through the condensation of impurity; the quantity of air respired being equal in two populations, the quantity of impurity taken in bears a certain proportion to the strength of the noxious mixture. Density of population does not imply necessarily, but it does indicate density of zymotic impurity in most towns, and a resulting high rate of mortality." Increased precautions should follow in proportion to the density, to obviate its evils. The deaths for the year in these towns were over one thousand a week more than the healthy standard. Some of these towns show frightful mortality lists, and all are higher than that of London. One pleasing fact remains to be noted: nearly all the large capital cities of Europe, except in Russia, have a system of observations, recording deaths and fatal disease, by which we are able to make comparisons and trace causes, which the art and science of man may obviate. The great success which sanitary science has achieved in England gives promise of almost perfect immunity from such plagues as typhus, typhoid, diarrhœal affections, diphtheria, etc. If an improved system of ventilation, sewerage and good water diminishes the death-rate in Europe, and its old capital cities, what may we not expect from our young towns and cities, which are yet comparatively free from surface saturation with excreta of man and animals? This subject has a personal interest to all our surroundings, and particularly as we may now remedy these defects in a comparatively easy manner, when in later years the obstacles would be serious and almost insurmountable.—*Philadelphia Reporter.*

On the Use of Dry-Powdered Blood. By Dr. De Pascale, of Nice.

Several years ago, I published from my experience and medical practice, some observations on the very beneficial effect of warm blood taken the moment when extracted from the calf or ox, killed for general domestic use.

I mentioned at that time the cases of three invalids, not English, suffering from hæmoptysis, in whom tubercles were diagnosticated, who derived great benefit from that treatment. The quantity of blood lost by one of the abovementioned invalids was enormous; but his perseverance for two years or more in drinking daily the blood, made him well and healthy. At this present time he is walking about Nice, or attending to the business of his large establishment.

I do not wish to dwell upon the great improvement in my own general health after drinking the warm blood for about a month. One of the English doctors practicing in this place had the opportunity of verifying my improvement, and the experiment which I made, when in a state of general weakness and pallor, in consequence of suffering for many years from malarial fever, taken during the siege of Venice in 1848 and 1849.

Every one knows the history of those barbarians, who were accustomed to drink the blood of their victims at a feast after their battles; and also of those who were supported by the blood of their companions, wrecked in the *Medusa* in 1807; and of others who have been nourished in the desert by the blood of animals.

Dioscorides affirms, in his *De Medicinali Materia*, that animal blood has been used for the purpose of curing diseases; the old women adopted a similar system.

Finding among the English and American residents in Nice an unconquerable repugnance to such a remedy, the name alone having the power of producing nausea, I was obliged to disuse it. But afterwards a dim recollection of the manner in which it was administered by old medical men in my youth, made me adopt the plan of giving it in the form of dry powder.

History also relates that dry-powdered blood was used before the thirteenth century, when the quack, Jean De Gaddesden, brought it into renown.

It is easy to understand the comparative difference between the warm and the dry blood. In the first there is life with animal heat, and volatile principles, which conduce to assimilation. Notwithstanding, in the dry blood, fibrin, albumen, hæmatozin, manganatic, and ferruginous salts remain.

Between the seventeenth and eighteenth centuries the celebrated anatomist of that time (F. Buischio) found in the blood the necessary elements for the composition of every tissue of our body. At the end of the seventeenth century also was discovered one of the most important principles of the blood, that is, iron, by M. Lamey, and afterwards by Berzelius. According to Berzelius, a distinguished professor of chemistry, the blood of the ox is most similar to that of man; this, in fact, I have used in several cases of general weakness with anæmia, and in cases of chlorosis.

The blood of the ox, after being dried in a water-bath, is

reduced to a very fine powder, and grated through a sieve. Dry blood can be taken for any length of time, being almost tasteless, and no repugnance is likely to be felt, as is often the case with raw meat. It can be taken as any common powder, mixed with soups, milk, marmalade, chocolate, or enclosed in a wafer.

In two cases I have given the powdered blood under the name of nutritive powders, mixed with a small quantity of pepsine; choosing that name lest ladies, startled by one more precise, might have difficulty in taking the medicine.

The quantity to be taken may vary according to the age, sex, or the state of health and digestive power of the patient. In general, I begin with thirty grains, which is increased according to circumstances; but quantity must be left to the discretion of the physician who prescribes.—*Med. Press and Circular.*

Editors' Book Table.

[NOTE.—All works reviewed in the columns of the CHICAGO MEDICAL JOURNAL may be found in the extensive stock of W. B. KEEN, COOKE & CO., whose catalogue of Medical Books will be sent to any address upon request.]

BOOKS RECEIVED.

Illustrations of the Influence of the Mind upon the Body in Health and Disease. Designed to Elucidate the Action of the Imagination. By DANIEL HACK TUKE, M.D., M.R.C.P., etc., etc.

Mental Physic is but little treated of in the text-books, yet the great majority of the profession know well enough that embarrassment will make a diffident man sweat; that fear will make a coward soon pass a cathartic-like dejection; that "attention and emotional excitement" will bring on uterine pains in an oversympathetic female friend in attendance in the lying-in-room; that mental anxiety, or suspense, will induce a copious flow of pale urine, or decrease the usual amount of gastric juice. Any one proposing to cure disease, twenty years ago, by using mental means alone, would have been considered of very doubtful veracity. To-day many astonishing cures are accredited solely to mental influences.

The favorite explanation of the curative results of potencies

and attenuations, by unbelievers, is that all good is accomplished through the expectation, belief or "imagination" of the patient. Every physician acknowledges that his "success" is almost universally the best in those patients who manifest the most implicit faith in him. On such persons bread pills will act as cathartics, sudorifics, anodynes, or as any other remedy, provided the doctor announces such and such effects are to follow.

Mental influence over the body is an old, old subject. "The mind acts on the body and the body reacts on the mind," is an idea common enough, and it implies two classes of phenomena quite unlike. It is easy enough to persuade ourselves we understand how pathological conditions cause mental disturbance. Abnormal stimuli, malnutrition, imperfect circulation, deformities, and other causes, disturb the brain. But mental influences on the body cannot be so classed. Bodily conditions can be investigated by the microscope, by chemical re-agents, and the various means now taught by physiologists, but mental states cannot be touched, seen, or in any way investigated, except through their effects. Every function of the body has been exhaustively studied, and not a base or an acid in the whole body exists that has not been carefully investigated. Not so thoroughly, however, has the work been prosecuted in mental anatomy and physiology—in fact, this work is only in its infancy. In accounting for effects of pathological conditions on the mind we have something *tangible*, something *known* to work from; but in accounting for effects of mind on body we start from the unknown and possibly unknowable.

Dr. Tuke's idea, in writing this book, is to begin work in this uninvestigated field. It is the first work on this subject extant, and practicing physicians will be amply paid for reading it carefully through, and studying especially the chapter on psycho-therapeutics.

The plan of treating the subject adopted by the author, consists of considering the qualities, relations, and effects on the body of each of the three grand divisions of the mind, viz., the intellect, the emotions, and the will. The influence of each of the three divisions upon sensation, upon the voluntary muscles, (movements, spasms and convulsions, and loss of muscular power,) upon the involuntary muscles, and upon the organic functions, is discussed in separate chapters. Under each division are cited numerous

illustrations of great interest. The plan of considering the subject is so well laid out, that every instance of mind influence over the body can be easily classified. By far the most interesting portion of the book is the last chapter but one, on "psycho-therapeutics." Every word of it will be read with absorbing interest, and the only regret one experiences is that no more can be written of a practical character. The character, conduct and ability of the physician at the bedside, are considered highly important elements of success. Hope and confidence are powerful aids to the doctor in effecting curative results, and fear is capable of exercising marvelous therapeutic activity. Exciting the former, and sparingly or rarely employing the latter, are powerful forces for cure in the hands of a perspicacious man. Dr. Rush told us he never prescribed remedies of doubtful efficacy in the critical stage of acute diseases "until he had worked up his patients into a confidence, bordering upon certainty, of their probably good effects." The success of such proceeding oftener answered than disappointed his expectations. Dr. Tuke relates the following:—A very intelligent naval officer suffered violently, for many years, from cramp in the stomach. Anodynes had been exhausted one after another. Bismuth in largest doses had been used and "worn out." On one occasion when suffering severely from the after effects of some form of opium, he was informed that during the next attack he would be put under a medicine, generally believed to be most effective in such cases, although rarely used because of its dangerous qualities—provided he assented. The latter he quickly did. Accordingly, on the first attack after this, a powder containing four grains of powdered biscuit was given every seven minutes, while the gravest concern was manifested in his presence, lest too much be given. The fourth dose caused an entire cessation of pain. Thirty-grain doses of bismuth had never procured relief in less than three hours previously. More powerful than either hope or fear, as a curative agent, is the patient's will. Dr. Laycock asserts that the will can effect such changes in the brain as to arrest an attack of angina or epilepsy. Dr. Tuke quotes the interesting case of Crosse, the electrician, who was bitten by a cat that died the same day of hydrophobia. Three months subsequently he felt, one morning, great pain in his arm, accompanied by extreme thirst. Spasm seized his throat upon attempting to swallow water. It then

flashed upon his mind that he was a victim of hydrophobia. His agony of mind was indescribable while contemplating such a death. He concluded he must die. At length he began to reflect, and reflection aroused his will, and he determined he *would not* die. Accordingly he shouldered his gun and went out for the purpose of shooting, his arm aching intolerably the while. "*I walked*," he says, "*the whole afternoon, exerting at every step a strong mental effort against the disease.* When I returned to the house I was decidedly better; I was able to eat some dinner and drink water as usual." In three days the pain had left his arm. He recovered, wholly.

Mesmerism and Braidism are noticed at some length in closing this chapter. No one can determine whether the production of such artificial hypnotism will be used to any great extent to facilitate cures, but that it *is* capable of being so used, every reader of Dr. Tuke's book will concede.

Almost every physician neglects the systematic and scientific employment of physical aids in curing disease, and in so doing one means is thrown away, more powerful than all the agents in the materia medica. This means, empyrics use almost exclusively, and educated medical practitioners ought to divest it of unnecessary accompaniments with which the former envelop it, and incorporate it in the active agents daily employed. J. H. E.

Editorial.

To Abortionists,

Who occasionally favor us with their confidential communications, expressing their deep interest in "suffering womanhood," their sympathy with the "tender sex" in the "dangers of maternity," their anxiety to promote the "mental, physical and moral (!) well-being of humanity," with a great deal more of the same disgusting bosh, and finally, and most important of all, their entire willingness to aid, abet, or commit murder, *i. e.*, fœticide, by pastille, bougie, sound, syringe, or in whatever way may be most secret, safe and profitable!—we have to say, that we are now prepared to give their circulars a fitting reception, and to dispose of them in a manner

most conducive to the protection of womanhood and the promotion of the best interests of mankind. We shall therefore be happy to hear from any and all of these philanthropists! and to introduce their communications to the notice of the United States District Attorney, for indictment under the recent Act of Congress, prohibiting the transmission of obscene publications through the United States Mails.

The "Act" referred to is comprehensive in its scope, and specifies, as objects within its meaning, all statements having reference to the procuring of abortions, or to the *prevention of conception.*

The last communication of this kind, which we have received, is now in the hands of the United States District Attorney for the Northern District of Illinois, a gentleman thoroughly appreciative of the true legal and social relations of this crime and its perpetrators, entirely aware of the extent of his own power in regard to them, and determined to use it to its utmost limits to accomplish the eradication of the most pestilential evil of the day, an evil whose enormity and universality is known to few, although its unrecognized effects are patent to all in the wide-spread depreciation in female health in the so-called upper classes of society, in the alarming diminution in the birth-rate, and in the general social demoralization.

We have watched with intense interest for many years, the ineffectual attempts to suppress this crime, by the punishment of its perpetrators after the fact, and have been driven to the conviction that the extreme difficulty, indeed almost utter impossibility, of convicting offenders was due not so much to the absence of evidence as to the lack of appreciation by public sentiment (of which juries are supposed to be the exponents) of the true nature of the crime. Until the public mind is impressed with the truth that fœticide is *murder*—not manslaughter, but *murder*—we will look in vain for the conviction of its perpetrators by juries of any graver offenses than midemeanors.

It is by the medical profession alone that this enlightenment of public sentiment must be inaugurated, and, with the co-operation of the secular press, be accomplished. The platform occupied by a majority of the clergy, at the present time, is too narrow and too insecure in its foundation to justify the expectation of very efficient aid from that quarter.

We recognize in the recent Act of Congress, a means which promises more than any other yet devised for the total eradication of this fashionable form of diabolism, as it strikes at its very source and origin rather than at its final consummation.

A noxious plant is not destroyed by the destruction of its fruit, but by cutting away it roots through which it derives its sustenance and support. If therefore, physicians, who have the interest not only of humanity but also of their own profession at heart, will be faithful and zealous in bringing to the notice of the proper authorities all publications of this character which may fall into their hands, they will not only aid most efficiently in protecting society at large from the greatest curse which now rests upon it, but will also remove from their own profession a foul excrescence which now deforms it. W. H.

Cholera.

The efforts of some of our professional brethren, and of a large portion of the secular press, at the present time, to excite a cholera panic, suggest the propriety of quoting to them the oriental fable of "The Cholera Fiend," who, when accused by the pilgrim in the desert with having slain thirty thousand pilgrims, charged twenty thousand to account of fear, leaving only one-third of the mortality to his own account.

The past history of Asiatic cholera has demonstrated clearly that its progress is regular and its track well defined; it has never yet made it appearance anywhere by concealed approaches, and yet we are told that the disease rages in New Orleans, in Memphis, in Nashville, Louisville, and Cincinnati—developed spontaneously, perhaps. If this be so, it constitutes a "new departure" in the œtiology of the disease, and introduces a new element into its study.

Cases of disease presenting many of the characteristics of cholera occur yearly in most of our large cities, and almost every physician during some "heated term" sees a case which, "if cholera were prevailing, he should be disposed to call cholera."

The morbid influence prevailing just now in the cities south of us, and to some extent in this, seems to be very respectful of persons and places, selecting the filthiest individuals as its victims and the filthiest localities for its field of operation. Heat, unwholesome

food, and filth, are doubtless the efficient agents in the generation of the disease now prevailing, and these, neither singly nor combined, will generate cholera. The first factor is not within our control, the others are; and we are sure, that prudence in diet, in avoiding that which is positively unwholesome in food, and temperance in drink, with cleanliness of person and premises, will disarm the other factors of their efficiency as morbific agents. In this city there are numerous foci of disease in the many open privy vaults, left exposed since the fire, and now, under the combined influence of heat and a dry atmosphere, exhaling pestiferous gases far and wide. There are many of these in the heart of the business portion of the city, proclaiming their presence by unmistakable evidence, to even an utter stranger. The authorities cannot occupy themselves more beneficially, in the protection of public health, than to cause the disinfection of these receptacles and the removal of their contents at once. The danger from this source is much more imminent than from Asiatic cholera. W. H.

Rush Medical College Clinics.

A course of Clinical Lectures upon the Diseases of the Brain and Nervous System, will be commenced at Rush Medical College, corner of 18th and Arnold streets, on Saturday, August 2nd, at 3.30 P. M., and will be continued on every succeeding Saturday throughout the year, by Dr. Walter Hay, Adjunct Professor of Theory and Practice of Medicine and Lecturer on Diseases of the Brain and Nervous System in Rush Medical College.

The Practitioner.

As indicating the growing attention the subject of hygiene is receiving, not only from the public but from the medical profession, we are glad to see that *The Practitioner* (Macmillan & Co., London and New York,) is to be enlarged by the addition of a department devoted to Public Health. The forthcoming number will contain, under this head, articles on Sanitary Organization in England; the Health Aspects of Sewage Irrigation; the Propagation of Typhoid Fever by Milk; International Hygiene in relation to Plague and Cholera.

Loot.

Dengue or Break-Bone Fever.

From the third of September till the twenty-ninth of November, 1872, I had occasion to treat one hundred and twenty-seven cases of Dengue Fever. Nearly all the cases were of a mild type; only two or three required treatment in the hospital. Before the fever made its appearance at this place, it had been very prevalent both at Matamoras, Mexico, and Brownsville, Texas, towns adjoining this post. None escaped it; old and young, natives and strangers, were alike attacked, as well as many old inhabitants who had escaped during former visitations. There were no deaths from the fever, either in the towns or the garrison. The type, as it appeared among the troops, was milder than that in the towns adjoining. This may be due in some measure to the mild treatment I used, and the more heroic treatment adopted by the civil physicians.

My plan of treatment was rest, low diet, hot foot baths when the fever was high, at bedtime small doses of a mixture of fluid extract of colchicum, antimonial wine, spirits nitre and nitrate of potash, repeated every six or eight hours till the colchicum began to affect the bowels. After this I gave no more medicine for a day or two, until the end of the period of fever, which lasted generally seventy-two hours; when I gave five to eight grains of quinine in solution three times a day, till the system was fully under the effects of the medicine. Average length of time for each case under treatment, 4.29 days.

I am fully convinced from observation and from personal experience, as my own was the first case of the fever in the garrison, that the Dengue is an indigenous yellow fever, running a course precisely similar to yellow fever (of which disease I had an attack about two years ago), the fever lasting forty-eight or seventy-two hours, with increased temperature in the evening, the period of calm of longer or shorter duration, terminating often in a profuse sweat, having a characteristic odor very similar to the transudations in yellow fever, followed by a period of convalescence which is generally short and rapid, but sometimes slow, and always attended with a good deal of pain in the bones. The symptoms and signs are the same as in yellow fever, only less marked: pain in the back of the neck and loins, congested eyes, but rarely ferrety as in yellow fever, tongue velvety, with red tip and edges, the attack coming on suddenly, in almost every case in the midst of the most robust health. The disease spreads by the action of fomites, like yellow fever, and is not contagious.

I had no opportunity to test the axillary temperature, for the reason that my thermometer got broken in transportation; but in no case was the skin very hot, so far as could be judged by applying the hand to the surface. Thirst was not very troublesome; after the fever there was great indisposition to sleep for several nights, in some cases requiring an anodyne at bedtime.—*W. E. Whitehead, M.D., U.S.A., in Pacific M. & S. Journal.*

Cod Liver Oil and Lacto-Phosphate of Lime.

This remedy is being quite extensively prescribed by physicians, and as considerable inquiry has been made as to an eligible mode of prescribing it, I will give my experience in the manufacture of the article, and also a simple process for making syrup of lacto-phosphate of lime.

For a long time I have had demand for a tasteless cod liver oil, and have been in the habit of preparing it in the form of an emulsion with gum arabic and water, and covering the odor with a few drops of essential oil of bitter almonds.

Over a year ago I found physicians were prescribing cod liver oil and lacto-phosphate of lime, and I devised a formula for it, based on my experience with the simple emulsion and the syrup of lacto-phosphate of lime, for which a considerable demand had sprung up. The formula I then devised has been followed by me up to the present time, and has invariably given satisfaction, and produces an article which does not separate or become rancid.

I think, however, it should be prepared extemporaneously as prescribed by physicians, and I have not kept it on hand, but prepare it as wanted, thus always giving a perfectly sweet article.

Take of gum arabic, oz.ij dr.ij; water, f oz.ij; syrup lacto-phosphate of lime, f oz.vi; cod liver oil, f oz.viij; essential oil bitter almonds, six drops; rub the gum, water and syrup together, until a smooth mucilage is made, then add the oil gradually with constant stirring, and, lastly, the oil of bitter almonds.

Thus made, each table-spoonful of cod liver oil and lacto-phosphate of lime contains four grains lacto-phosphate of lime and fifty per cent. of cod liver oil. The gum in the above should be selected, ground and passed through a sieve of sixty meshes to the inch. Cod liver oil and lacto-phosphate of lime prepared in this manner, forms a preparation free from unpleasant taste and odor, and enables the practitioner to administer these valuable remedies without repugnance on the part of the patient.

Syrup Lacto-phosphate of Lime.—Take of chloride of calcium, oz.i; phosphate of soda, oz.iv; concentrated lactic acid, oz.i; dissolve the chloride of calcium and phosphate of soda separately, and mix the solutions; wash the precipitate and dissolve in the acid. Filter and mix with sufficient syrup to make two and one-half pints.—*Edward Chiles, in American Journal of Pharmacy.*

Treatment of Nervous Aphonia and Chronic Pharyngitis.

Dr. Mandl, in his "Traite Pratique des Maladies du Larynx et du Pharynx," quoted in the Dublin *Journal of Medical Science*, April, 1873, notes as an important clinical fact, that an essential nervous aphonia, viz., bilateral dynamic paralysis of the tensors of the vocal cords (crico-thyroideans) may perhaps be in young girls the precursor of a tubercular inflammation which declares itself later. The return of the voice on the application of electricity is not an absolute security. It is in such cases especially that it is necessary to abstain, according to Trousseau, from the employment of ferruginous preparations, which determine a sanguineous plethora by no means devoid of serious inconveniences in individuals predisposed to hæmoptysis and to tuberculization.

For a long time Dr. Mandl also has prescribed the use of iron in chronic laryngitis and pharyngitis, as the plethora consecutive to its administration turns into a local hyperæmia; consequently, chronic phlegmasias are more often kept up by it than amended.

That particularly troublesome complaint, known as granular (follicular) pharyngitis, or clergymen's sore-throat—generally chronic in its nature, and, though often temporarily relieved, apt to relapse—Dr. Mandl has succeeded in curing, by painting the granulations twice a day, with a solution composed of one part of metallic iodine and one of carbolic acid, dissolved, by means of iodide of potassium, in one hundred parts of glycerine. If irritation supervene, the application is less frequently applied, or superseded for a time. The largest granulations are first scarified, and then touched with the glycerole, but in a more concentrated form, and in variable proportions, according to the degree of the affection. This local treatment alone is, he believes, sufficient to radically cure the disease, independently of any supposed diathesis. Dr. Mandl may probably have been led to adopt this mode of treatment from Dr. Hastings, who recommended the application to the "mucous crypts which had previously resisted the remedial effects of nitrate of silver," of a "saturated solution of iodine in rectified spirit."

Why Insanity Increases.

Sir James Coxe, Commissioner of Lunacy for Scotland, in discussing this subject, strikes at the root of this and many another evil of our civilized life, when he says in his last address:—

"Communities should be trained in a knowledge of the human organism, and of the laws which determine its welfare. Ignorance of such knowledge has an all-pervading influence. It affects the proceedings of the legislature, of the clergy, and of teachers, and through their instrumentality the conduct and behavior of the

whole community. In the first place, the complex nature of the human mind is overlooked; education is too much restricted to the cultivation of the intellectual faculties, and even their training is, as a rule, only partial and imperfect. In the second place, moral training may be said to be almost entirely neglected; and the same remark is applicable to physical training.

"The neglect of physical training is almost universal, and even where it is attempted, it is calculated to do, perhaps, more harm than good.

"My doctrine then is, gentlemen, that insanity, so far from being a disease of civilization, is a disease of ignorance, and that the only way in which its extension may be checked is by imparting to every man a knowledge of the structure of his own body, and of the relations in which he stands to the moral and physical world around him."

This is sound doctrine, and we commend it to the thoughtful consideration of that class of physicians who fancy any physiological instruction furnished the public is *margarita ante porcos.*—*Philadelphia Reporter.*

A Physician's Diary of Business.

A pocket diary has been picked up in the street, and now is in the finder's possession, awaiting its owner. From the following extracts, it appears the loser was a medical man:

"Kase 230. Mary An Perkins. Bisnes, washwoman. Sikness in her hed. Fisik sum blue pils a soaperifik; age 52. Ped me one dollar, 1 kuarter bogus. Mind get good kuarter and mak her tak mo fisik.

"Kase 231. Tummes Krinks, Bisines, Nirishman. Lives with Pady Molouny whot keeps a dray—Sikness, digg in ribs and tow blak eys. Fisik to drink my mixter twict a day of sasiperily bere and jellop, and fish ile, with asifidety to make it taste fisiky. Rubed his face with kart grese liniment, aged 39 years of age. Drinked the mixter and wuddnt pay me bekase it tasted nasty, but the mixter'll work his innards, I reckon.

"Kase 232. Old Misses Boggs. Aint got no bisnes, but plenty of money. Siknes awl a humbug. Gav her sum of my celebrated "Dipseflorikon," which she sed drank like cold tee—wich it was too. Must put sumthink in it to mak her feel sik and bad. The Old Wommen has got the roks."

DeWitt County Medical Society.

The DeWitt County Medical Society met in annual session on the 29th day of April, 1873.

Members present—Drs. J. H. Potter, T. W. Davis, John H. Tyler, John Wright, Z. H. Madden, Thomas K. Edmiston, and Christopher Goodbrake.

Also present—Dr. J. J. Starkey, of Waynesville, and Dr. W. H. Crothers, of Maroa, Macon county.

Dr. Potter, President, in the chair.

The minutes of the last meeting were read and approved.

On motion of Dr. J. Wright, Dr. W. H. Crothers was elected an honorary member of the society.

Dr. Wright proposed Dr. J. J. Starkey for membership, and the Censors having reported favorably on his case, he was, on motion of Dr. Goodbrake, elected a member of the society.

The election of officers being in order, the following gentlemen were elected for the ensuing year: President—Dr. J. H. Tyler, DeWitt; Vice-President—Dr. T. W. Davis, Wapella; Secretary—Dr. C. Goodbrake, Clinton; Treasurer—Dr. Z. H. Madden, Clinton. Censors — Dr. W. G. Cochran, Farmer City; Dr. J. H. Potter, Wapella; Dr. J. J. Starkey, Waynesville.

Dr. Tyler, on taking the chair, delivered a short address, which was well received by the members present.

Dr. Thomas W. Davis reported the case of a gentleman in whom very strange symptoms had occurred from the administration of an enema, consisting of a tablespoonful of common table salt in solution.

Dr. Tyler reported three very interesting cases of *cerebro-spinal meningitis*.

Diseases of the Liver was chosen as the subject for discussion at the next meeting.

The essayists having failed to perform their duties, they were, by order of the President, continued.

On motion of Dr. Goodbrake, the following resolution was unanimously adopted:

Resolved, That the thanks of the society are due and are hereby tendered to the editors of the *Clinton Public* and *Clinton Register* for kindly publishing notices of meetings of this society.

On motion of Dr. Wright, the thanks of the society were tendered to the proprietors of DeWitt Hall for inviting the society to meet in their splendid room without any pecuniary remuneration.

On motion, the Secretary was ordered to furnish copies of the proceedings of this meeting for publication in the Chicago medical journals, our county papers, and the *Maroa News*.

On motion of Dr. Madden, the society adjourned to meet in quarterly session in Clinton, on the first Tuesday of July next.

C. GOODBRAKE, M.D., *Sec.*

THE

Chicago Medical Journal.

A MONTHLY RECORD OF

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EDITED BY J. ADAMS ALLEN, M.D., LL.D.; AND WALTER HAY, M.D.

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Original Communications.

ARTICLE I.—*The Ophthalmoscopic Appearances in Cases of Exophthalmic Goitre.* By REUBEN A. VANCE, M.D., New York City.

This peculiar neurosis, like many other affections of the nervous system, is attended with morbid changes in the intra-ocular structures which can be recognized by the aid of the ophthalmoscope. The symptoms of the disease, however, are so marked, the exophthalmos and enlargement of the thyroid gland, with palpitation of the heart, so characteristic, that the diagnosis of the affection requires no aid from this method of physical exploration. Yet, so long as there are unsettled points, or diverse views, in relation to the pathology of any morbid process, attention to the visible phenomena and careful observation of those changes which can be rendered apparent, should not be neglected. This is especially the case where nervous structures are involved, either primarily or secondarily, and is my reason for calling attention to the ophthalmoscopic appearances presented in ten cases of this disease which have been under my care at various times during the past five years. The intra-ocular structures were affected as follows:

In 2 cases there was anæmia;

In 7 cases there was congestion; and

In 1 case there was congestion, with œdema of the disk.

The patients were all under thirty years of age; eight were females and two were males; organic disease of the heart was discovered in six cases—one male and five females; the three characteristic symptoms, exophthalmos, enlargement of the thyroid gland, and palpitation, were noted in all but one case—in this patient the pulse was 120 when in repose, the thyroid was quite large and palpitation of the heart so distressing as to seriously interfere with sleep, yet the eyes did not protrude ordinarily, but only became prominent under excitement.

The intra-ocular morbid appearances are mainly those due to vascular disturbance of the parts in the region of the optic nerve entrance. In nine cases they were limited to variations in the calibre, course, and state of distension of the blood-vessels of the papilla and retina, while in one, these changes were supplemented by an œdematous state of the disk in the right eye, the left remaining congested. The ophthalmoscopic appearances were modified quite appreciably, in cases of congestion, by mental excitement, or physical exertion, but in anæmic cases, such influences produced no perceptible changes, although the exophthalmos was invariably increased, and the other phenomena of the disease were rendered more apparent.

In two cases the state of vascular fullness was much less than in health. The retinal arteries were small and indistinct, straight in their course and joined by few branches; the veins were likewise diminished in size, were less darkly colored than in health, and presented the double outline generally observed in the arteries only; the disk was not of its natural color, was unusually transparent, and with the direct examination, its fibrous structure could be readily discerned, while the vascular branches apparent in health had disappeared from view. In these cases physical examination could detect no cardiac disease of an organic nature, and, as has already been stated, neither mental excitement nor physical exertion had any effect upon the character of the intra-ocular appearances.

In the cases of congestion, the ophthalmoscope revealed appearances directly the reverse of those just described. The vas-

cular supply of the intra-ocular structures was in excess of the standard of health, and varied in degree from slight hyperæmia to congestion so extensive as to render the papilla of the same color as the surrounding choroid and retina. The arteries distributed to the retina were larger than in health, their branches more numerous and their course less direct; the disk was variously colored, at times its normal creamy-white hue was changed to a rosy tint, and again it assumed the same color as the surrounding structures—in such cases its situation could be discovered only by tracing the retinal vessels to their point of exit; the veins were dilated and tortuous, and at the points where they were joined by branches, the main trunks presented irregular enlargements, in some cases closely simulating hæmorrhagic extravasations. New vessels were developed from the sides of the disk, and subdivided into branches of considerable size. Venous pulsation, especially in the main vessels as they traversed the papilla, was commonly observed, and in one patient, well marked arterial dilatation and contraction synchronous with the cardiac systole and diastole, was a constant phenomenon.

In one patient, presenting marked evidences of intra-ocular hyperæmia, an examination made a few hours subsequent to a violent paroxysm of dyspnœa, attended with spasm of the glottis, violent palpitation and great mental excitement, revealed congestion with œdema of the disk in the right eye, while the congestive appearances in the left were unchanged. The right disk, which previously had been of a deep red color, was opaque and striated, grayish-white in appearance and irregularly enlarged—its nasal side projecting abruptly, the infiltration gradually diminishing towards the temporal margin where it was in the same plane as the adjacent retina. The retinal veins were quite large, tortuous, and presented circumscribed dilatations, while the arteries were nearly normal in appearance—much smaller than they had been previously, or than those of the left eye.

The generally accepted view of the pathology of this disease as a congestive neurosis, attended with secondary changes in the tissues of the organs principally affected—the walls and orifices of the heart, the substance of the thyroid gland, and the intra-orbital structures—would account for the ophthalmoscopic appearances in the majority of the cases I have referred to. The increased

throbbing of the thyroid, the greater projection of the eyes, and the distressing palpitation under emotional or physical excitement, coincide so fully with the results of experiments performed on the sympathetic, together with its known physiological action in parts where its effects can be observed, renders the inference almost irresistible, that to perverted activity of that nerve, is to be ascribed the curious phenomena of exophthalmic goitre. The congestive changes due to vaso-motor paresis would explain the post-mortem appearances observed in the thyroid, the heart, and the parts behind the eye, and, as one would imagine, the changes rendered visible, during life, by the aid of the ophthalmoscope. That it does not do so in all cases, the patients presenting evidences of intra-ocular anæmia that I have alluded to, show most conclusively. It is possible that some local change, by interfering with the intra-ocular circulation, may produce this anæmic state, and at one time, from certain other circumstances, I was led to believe that secondary changes in the congested tissues behind the eye, compressing the nervo-vascular trunk, was the cause of the intra-ocular appearances in these exceptional cases. Notwithstanding the many objections that can be readily urged against this explanation—the most cogent of which is the peculiar nature of the ophthalmoscopic appearances themselves—I am disposed to adhere to it until some better one is offered.

In the remaining cases the intra-ocular evidences of congestion in its various degrees, were observed to fluctuate with exacerbations and remissions of the disease. An increase in the severity of the symptoms was accompanied by an increased degree of intra-ocular hyperæmia, and *vice versa*. In one instance œdema of the disk was observed as a consequence of an extreme degree of congestion, and this circumstance is of importance as an illustration of the fact that that condition can be developed from local derangement of the circulation, and is not invariably of intra-cranial origin as is frequently stated.

ARTICLE II.—*Cholera Infantum.* By ALEX. S. VON MANSFELDE, M.D., Chicago, Ill.

"Caloric not only expands living tissues, thereby diminishing vital affinity, but it also increases their susceptibility. It is chiefly by its power thus to diminish the tonicity or compactness of the tissues, while it increases their irritability, or susceptibility, that caloric, or a high temperature, becomes an efficient predisposing or existing cause of disease. Acting more directly on the cutaneous surface, and, both by continuity of structure and close physiological sympathy, on the whole internal mucous surface, also, a high atmospheric temperature renders these structures morbidly sensitive, while their expansion renders them more lax, and thereby puts them in the most favorable condition for sudden and rapid fluxes of fluids into and through them."—*Clinical Lectures of N. S. Davis, page* 151.

I am satisfied that the prime cause of summer complaint, which the learned Doctor calls "*high temperature*," is the identical trouble, and that teething, miasmata, etc., are minor accessories toward producing this so fatal disease of our children.

But I cannot agree with him in regard to the ultimate effect caloric has upon the vegetable or animal creation.—See *Medical and Surgical Reporter, Vol.* 25, *page* 9.

Is the expansion incident to the influence of heat the same all through the body? This is certainly not the case. It is an established fact, that solid bodies are better conductors of heat than fluids, and that heat only exerts its power through the interstices of atomic elements, which it has the power of enlarging. Now suppose that heat reaches the mucous apparati of the interior body, it will surely prove its influence first upon the cell walls of the mucous cell structures, and if it have any effect upon them, it will exert it before the cell contents shall perceive the slightest elevation of temperature.

Now this state of affairs is not admittable for certain organs only, for heat is not so partial, and yet the kidneys have suspended the normal action already before the fluxes from the intestinal canal take place. Does heat not affect the extensive mucous surface of that organ, or that of the lungs, the sniderian membrane and those of the liver?

It is always better to take for the explanation of our theory a single cell of a diseased or deranged organ, and perceive the changes produced in the same.

Take for an example a round cell of the rete mucosum of the skin and submit it to the influence of heat; *expansion* takes place, but of what? Certainly not of the whole cell, but simply of its cell walls; and what is the consequence? A flux of the cell contents, through the enlarged interstices, existing in its membranous cover, follows.

This egress of the cell fluid normally takes place by every *contraction* of the living cell, *absorbing* new materials by its *expansion* from the adjacent oxidized blood.

Now place in contact with the cell expanded by heat, after it has lost a part of its contents, oxidized blood, will it take up from this medium the part that shall establish the equilibrium? Or will it not take up particles of entirely different physical calibre to those absorbed by the natural process of imbibition and thus change at once the whole body from a physiological to a pathological condition? (perversion of structure). If so, does the condition of a patient suffering from summer complaint justify such deductions?

We can nowhere see a general change of the organs of the body in cholera infantum.

One more effect of heat upon organized bodies is the loss of their watery parts. We know that heat dries up vegetable and animal particles, extracting therefrom their liquid parts, which is the necessary solvent and producer of organic functions.

Please to take the example of the cell of the malpighian layer of the skin again, and observe the consequences of an abstraction of its fluid parts, and note the difference.

In the former case there would be a loss of fluid, which surely could readily be supplied; but here the material is wanting, the contractions and dilations go on, but in a lessened degree, until there is no more stimulus for dilating the *not contracted* but *collapsed* cells. This collapse of the general structure is hastened by the loss of tonicity, which is produced through the lessened work of those organs, whose secretions are the true food of the more vital parts of the body, especially the nervous system—we speak *mostly* of the *liver* and its *products*.

We wish to be understood, that expansion of the structures,

is, the cell walls of the organic molecules, the cells, must be followed by hastened cell life, absorption and secretion of matter, until stagnation, the climax of such superwork, is reached; known as the pathological condition, inflammation.

Whereas the pathological index to cholera infantum is a general atonicity of the soft structures of the body, in no case to be allied with inflammation—it is the very opposite to this condition.

If our observation prove true, that is, that not excessive *expansion* by heat, but simply a lessened percentage of water, is the cause of summer complaint, we may justly be asked for a proof of association of cause and effect, and hasten to answer with a quotation from our article above referred to:

"The collapsed cells have no power to retain their fluid portion, and this oozes away through the pari passu prostrated excretory channels without restraint; and not only is this the case with the mucous tissues, but with the glandular structures and muscular fibres—they are all subject to the same law and consequences.

"These exudations and secretions, though governed by the same cause, will, under different circumstances, give rise to a different train of symptoms. In the stomach the acid secretion will produce upon the denuded surface an incontrolable effort at vomiting. The bowels are incapacitated to absorb any fluid; the brain, though at first painfully alive to the wants of the body, is lulled to rest by the same hand, till at last the exudate into the cranial cavity presses upon it, and soon the consequences are witnessed, nerve influence loses its power, and the last help vanishes.

"Will any one under such impressions venture to give a nerve sedative to control the action of the stomach, or prescribe chalk and magnesia usta controlling the acidity of the organic exudate, or an astringent to compel a lessened discharge from the bowels, driving the fluid so much the sooner into the cranial cavity, and hasten the advent of death, or give an anodyne to control the maniacal manifestations of anguish, knowing that only too soon the opposite state of affairs will take place?"—*Med. and Surg. Reporter, Vol.* 25, *No.* 1.

Referring to the all absorbing topic of treatment, we may be pardoned again if we quote from Dr. Davis' Clinical Lectures. On page 157 he says:

"Thus, in the first stage of those cases characterized by simple

serous discharges, either by vomiting or purging, the indications are to allay the morbid irritability of the mucous membrane, and to increase the tone or contractility of the capillaries; to fulfill these requires the judicious combination of a tonic and anodyne."

The doctor asserts, on page 151, that *caloric* and its consequence, *expansion*, are the prime trouble; why does he not now, when he comes to the practical deductions of his pathology, keep up the chain of logic? Why not counteract *caloric* by its natural antagonist, *cold?*

Can this not be done very easily? How grateful it is to the body of the sufferer to be immersed into water somewhat colder than the body! Does he not seemingly regain his strength?

Or does the learned gentleman assert that the partaking of phloridzine, opium, sugar of lead, or calomel, lends wings to high atmospheric temperature?

We confess the good effect of the tonic with the stimulant to the liver and its accessories, but see no reason why the doctor should give them, excepting he answers the above question in the affirmative.

We assert that the cause of summer complaint is high temperature and its effect in lessening the percentage of the *watery ingredients* of the animal organism, thereby producing collapse of the cellular structures of the body, from which mechanically the watery element exudes.

Our therapeutic deductions are of the so-called allopathic style: "contraria contrariibus curantur." We have a defect of water, and we supply it. Our cell structure works imperfectly, and is collapsed; we put it in a condition to resume healthy action by access to water, and encourage the trial by tonics and stimulants. We are aware of the lessened animal heat caused by the evaporation of the fluids of the body, and proven by the rapid consummation of all the fat of the system for that purpose; and we hasten to supply this material in the best manner possible. Our patient rapidly assumes the robes of health, and attests the correctness of our deductions.

Our saying and gainsaying may be somewhat incoherent for want of time for careful preparation, but our treatment of the disease stood the test of the last two summers, and was, to say the least, satisfactory to ourselves.

The defect of water was best replenished by baths of a medium temperature, followed by an inunction with a non-irritating oil; best is almond oil;—the object of the latter being a restriction of evaporation from the surface and the consequent loss of animal heat. It is also known to the profession, that in bathing, the body takes up a considerable amount of water.

In conjunction with this purely hygienic regimen, we give small doses of pepsine, subnitrate of bismuth and sugar, taking care to direct small doses repeatedly to be given, with a certain amount of water, milk-whey or milk, as the case may warrant, the prime object being the insurance of the administration of some fluid at stated intervals, which, without the medicine, in nine out of ten cases would be neglected, at the same time the latter aid the digestive apparati in their march to health.

Finally, we prescribe the following:

R. Olei Morrhuæ, - - - - - - - oz. ss.
Emulsionis Gum. Trajacanthi, - - - - oz. jss.
Quiniæ Sulphatis, - - - - - - - grs. iij.
Chloroformi, - - - - - - } *aa*, gtts. x.
Tincturæ Opii Simplicis, - - - - }
Tincturæ Columbæ, - - - - - - dr. ij.
Syrupi Ipecacuanhæ, - - - - - - dr. j.
Syrupi Rhei Aromatici, - - - - } *aa*, dr. ijss.
Syrupi Pruni Virginiensis, - - - }

A teaspoonful every hour or two to a child a year old.

The trajacanth emulsion is made by dissolving 2 drachms of gum trajacanth in 15 ozs. of water and 1 oz. of glycerine. A simple admixture of this emulsion with the other ingredients insures a perfect emulsion that will remain unchanged for a long time.

And what is the object of this medication?

The ol. morrhuæ, in combination with the gum, will cover the denuded surfaces over which it passes better than any other matter, and as the assimilation process is not altogether interfered with, some of the oil will be absorbed and aid in building up the lost animal heat.

The action of quinine is that of a substitute for an aliment lost by the inactivity of the liver, the province of which is either directly or indirectly to keep up the form of the cell structures, or their power of contraction and dilation.

The action of the columba and syr. rhei aromat. is that of excitors of liver function; but they are of benefit only when conditions are established that will favor renewed action—(*addition of fluid*)—otherwise they would be of no avail.

The ipecac, opium, and chloroform, guard the action of the other agents and keep the brain supplied with nourishment (*blood*), the anæmia of which is so dangerous to the patient.

The syrup of wild cherry is added to produce a better taste of the mixture.

In writing this article, we have no desire to simply criticise, for we know the value of the lectures above alluded to too well to be governed by so small a motive; but we wish to draw the attention of practitioners to this subject by daring to attack the lion, doing thus all we can for suffering childhood.

Since writing the above, our attention was drawn by Dr. F. Schaller, of this city, to an article in the "*Jahrbuch fur Kinderheilkunde*," No. 2, pages 176 and 177, written by Dr. Werthheimber, of Munich, subject, cholera infantum.

In this article the doctor advocates very strongly the administration of tea, good black China tea infusion. He foots upon the fact that the whole nervous system is relaxed, not only *per se*, but through the starvation process going on in the brain itself, anæmia of the same.

Tea, as well known, is a direct stimulant to the nerve centres and insures a renewed action of the same, and upon this action of the *drug* rests its good influence in cholera infantum.

But how does this agree with the anodyne principle of the lectures referred to?

ARTICLE III.—*A Case of Strangulated Femoral Hernia Successfully Punctured, with Subsequent Spontaneous Reduction.* By J. SUYDAM KNOX, M.D., Chicago.

Maria Van D——, a feeble colored woman, about 73 years of age, has suffered from femoral hernia of the right side, ever since her last confinement, nearly thirty years ago. On many occasions has it become strangulated, and been reduced by taxis. In the evening of the 20th of August, 1872, I was called to see her. The

hernia had been strangulated over twenty-four hours, presenting a tumor over three inches in diameter and nearly five inches long. The patient was much prostrated and suffering acutely. Chloroform was twice administered; first, to reduce by taxis, and when that failed, a second time, for the purpose of operating; but in each case its use had to be abandoned on account of the dangerous symptoms it produced. Under such circumstances the hernial tumor was punctured. The hypodermic syringe was used. After unscrewing the cap and removing the piston, the needle was pushed its full length into the apex of the tumor, and immediately a bloody serum, of decidedly fœcal odor, commenced to flow, without any escape of gas. After eight and a half ounces had thus escaped, the hernia reduced itself spontaneously. A third of a grain of morphia was then injected subcutaneously.

The patient was visited on the two following days. There was no increase of temperature, and no abdominal tenderness. The slight puncture of the intestine seemed to provoke no peritoneal inflammation, nor was there any apparent leakage from the gut after reduction was accomplished. In fact, recovery was complete as soon as the hypnotic effect of the morphia had passed off.

I report this case simply as being a suggestive one. Every one who has operated for strangulated hernia, knows the care and skill required; the danger of injury to the gut, or close-lying artery; the occasional result of peritonitis, or artificial anus; and in addition, the small percentage of risk which always accompanies wounds of large cavities and the use of anæsthetics.

Every surgeon also is familiar with the general success of paracentesis of the thorax, abdomen and scrotum, and with the fact that tapping in hydro-pericarditis and puncture of the intestines in excessive tympanitis, have been performed with impunity.

Why then should not puncture be generally adopted for strangulated hernia?

My own impression is, that, as in this case, the contents of the strangulated gut are always largely transuded serum, the result of compression of the veins at the hernial ring—such transudation invariably happens where the venous circulation is arrested, the arteries remaining patulous. If this transuded fluid is removed, the contents are no more than readily entered the ring and can as easily be returned.

Again, puncture can be followed by but one of the many results of the use of the knife, viz: peritonitis.

Briefly then, if the contents of the strangulated gut are fluid, and if puncture be innocent of evil consequences, it should be preferred to the use of the bistoury for the following reasons:

1. It is most readily and easily performed.
2. It is attended by far less risk of injury.
3. It requires no anæsthesia.

ARTICLE IV. — *Protracted Abstinence from Food.* By A. FORD, M.D., of Bowne, Kent Co., Mich.

April 25, 1873, was called to see Mr. M., aged 74 years. Farmer; born in the Highlands of Scotland; five feet ten inches in height; quite fleshy.

Found him suffering from what appeared to be bilious colic; severe pain in the epigastric region, with constipation of the bowels. Relieved the pain with hypodermic injection of morphia, and then gave physic. Did not get an operation for three days, then used the syringe, which relieved him.

May 3, was called again. Symptoms the same, with the addition of excessive nausea and vomiting. The pain came on periodically, about eleven o'clock P. M. Through the day he was nearly free from pain.

Failing to relieve him, and being obliged to leave town for two days, sent for Dr. M. to see him for me. He gave him large doses of calomel. After some two days got another operation, with partial relief.

He had now become somewhat emaciated, and on a very careful examination, discovered a small tumor in the region of the pylorus. Dr. M. saw him with me again. Concluded that the tumor, though small, pressed upon, or involved the pylorus so as to prevent the contents of the stomach from passing. Put him upon opium to keep him as easy as possible, as long as life should last. He now took no food, and even water was rejected within a few minutes after taking it.

Some of the friends were not satisfied, and so sent for Dr. L.,

an old gray-headed man, a former Regular, but now a convert to "similia similibus." He came in my absence. Said the young doctors were all wrong, that the trouble was with the liver, that there was an abscess, which pressing upon the stomach, caused all the trouble. That it was too late now, but if he had seen him in time *he* could have cured him.

For twenty-five days the patient took no food, and had no movement of the bowels. Died at midnight, June 14, of sheer starvation. There was so much dissatisfaction among the relatives, that a *post mortem* was decided upon. I made the examination eighteen hours after death. Our aged homœopathic friend was present. Found the liver perfectly healthy; bowels empty, except a little gas; stomach contained two or three ounces of water, drank just before he died. There was no *diseased* appearance about anything; but partially surrounding the pylorus, and an inch or two of the duodenum, was an irregular-shaped tumor, of perhaps four to six ounces weight, which in a recumbent posture completely closed the outlet of the stomach. The tumor was of a grayish-white color, and appeared to be fibro-cartilaginous, and looked like a perfectly healthy abnormal growth.

Selections.

Asiatic Cholera; its History, Causes and Prevention. By H. A. Buck, M.D., St. Louis, Mo.

We have very good authority for believing that epidemic cholera had its origin in the "*Black Death*" or "*Oriental Plague*" of the 14th century. And cholera, unquestionably, in all of its various forms, has destroyed more lives then all of the other epidemics taken together.

We are informed by historians that it swept off one-fourth of the inhabitants of the Old World, in the short period of four years.

England lost one-half of its population—London lost 100,000 in four months, and other cities in proportion.

It was preceded by great revolutions in the earth. From China to the shores of the Atlantic, the foundations of the earth were shaken, the atmosphere was in continual commotion; and endan-

gered, by its poisonous influences, both vegetable and animal life. These terrible convulsions are said to have begun in 1333, fifteen years before the *plague* broke out in China.

According to the traditions of the Chinese, the pestilence was followed by torrents of rain, and great floods, and more than 400,000 people perished in consequence of the floods. A few months afterwards an earthquake caused an extensive range of mountains to sink and disappear, and in its place a lake was formed, more than 100 leagues in circumference—where thousands found a watery grave.

It is estimated that 4,000,000 people perished in China in the year 1337.

Europe was also visited with earthquakes and other atmospheric phenomena. These convulsions continued till 1347, when the plague or cholera, in its primitive form, broke out in the East.

This epidemic entered the western countries of Asia from China, in the year 1347, and here the historian obtains the first certain knowledge of the character of the disease. From China the route of commerce ran to the north of the Caspian Sea through Central Asia—from thence to Constantinople, the medium of communication between Asia, Europe and Africa. Thus in all directions contagion made its way, and doubtless Constantinople and the harbors of Asia Minor were the great centres of infection, whence it spread all over the world. People were struck down by *Black Death* as if by lightning, and the young and the strong were more frequently its victims than the aged and infirm. The descriptions of the disease given by historians, are rather indifferent. They inform us that sometimes it commenced with bleeding at the nose, which was a sure sign of death. Both in men and women, tumors in the groin, and inside of the thigh appeared at the beginning. These varied in size, but were frequently as large as an egg. Similar tumors appeared afterward all over the body, and black and blue spots came out on the arms and thighs.

These spots were indications of the fatal termination of the disease. No power of medicine brought relief; almost all died in from one to three days, and generally without fever or other symptoms—such was the form that the *Black Death* assumed in 1347, and three years following. In 1360 and 1373, it assumed a milder form, and then it was called the *Oriental Plague.* The tumors no longer appeared, and bleeding at the nose was seldom known to occur.

It has been supposed by excellent medical authority, that the form thus assumed by the *Oriental Plague*, is identical with the cholera of the present age, and that the term *Black Death* applied to it, was derived from the livid and frequently spotted appearance of patients in cases of malignant cholera. The most reliable estimates given, state that China lost 13,000,000 by *Black Death* or *Oriental Plague.*

India was almost depopulated, and Tartary and Syria, and all the adjoining countries, were literally covered with dead bodies.

Cyprus, it is said, lost all of its inhabitants; and ships without crews were seen, long after, floating about in the Mediterranean. It was reported that in the East, excepting China, 23,000,000 fell victims to this pestilence.

No climate was a barrier to its devastating and death-dealing power, it penetrated the icy regions of Greenland, Iceland, Norway and Denmark.

It reached the British Isles in 1349, and Russia in 1351, and according to all accounts it was not as fatal in the cold climates as it was in the hot climates. Thus we have the form and character of what is supposed to have been epidemic cholera in its primitive state.

Quite a period of time elapses before we have any description of this epidemic again, although it is supposed by some to have prevailed in a milder form in those countries where it first made its appearance.

It visited London again in the year 1666, and the mortality averaged one-fourth part of the population. During the cholera of 1832, the worst plague that has visited London since 1666, the deaths were only one out of two hundred and fifty inhabitants. This decrease of mortality was owing to the sanitary improvements in regard to cleanliness.

The next description that we have of it, is by a physician attached to the Dutch East India Company. His book was published in Batavia, in 1629. In describing what he calls epidemic cholera morbus, he says: "It is a disease of the most acute kind, and therefore requires immediate application. The animal spirits are speedily exhausted, and the heart, the foundation of life, is overwhelmed with putrid effluvia. Those who are seized with this disease generally die, and that so quickly as in the space of twenty-four hours at most. This disease is attended with a weak pulse, difficult respiration, and coldness of the extremities, to which are joined great internal heat, insatiable thirst, perpetual watching, and restlessness and incessant tossing of the body. If, together with these symptoms, a cold and fetid sweat should break forth, it is certain death." This I consider a very good description of the epidemic cholera of the present age.

During the latter part of the 17th century, and until the year 1774, the cholera appeared to have confined its ravages almost exclusively to the Hindoos.

Hindoo practitioners appear to have been familiar with its symptoms, or at least a disease closely resembling it, which they called *vishuchi*, a term in their language signifying vomiting and purging. In the first campaigns of the British troops in India, in the year 1774, cholera presenting all the symptoms known to char-

acterize the epidemic, made its appearance at Madras, and proved very fatal to both the European and native soldiers, carrying them off very quickly after they were attacked. It is asserted that over 60,000 people perished between the years 1774 and 1781. The disease prevailed at various times between the years 1783 and 1790, and always with the same symptoms and with the same fatal results.

In the year 1783, the cholera broke out at the sacred bathing place on the Ganges. This was the year of the great pilgrimage; it is said 2,000,000 were assembled at this time. In eight days 20,000 fell victims. It did not extend beyond the place of bathing, and ceased on the dispersion of the multitude. In 1817, it broke out again on the banks of the Ganges, causing a greater destruction of life than at any other time.

By the end of 1818 its ravages embraced nearly all of Hindostan, and in 1819 it appeared in Java, in the Isles of France and Bourbon, and over India and China; in 1821, in Bagdad, Arabia; and in 1822, in Persia and Syria. In 1823 it broke out in Antioch, Tripoli, and all along the Mediterranean coast. In 1823 and 1827, the disease continued its ravages in China and India—in 1828 the Russian Empire was again invaded. The cold of the preceding winter stayed its progress, but the summer of 1829 found it committing terrible havoc in the same localities.

In 1830 it appeared in the Georgian cities, and in Poland. In 1831 in Warsaw, St. Petersburg, and all the principal cities of Russia, Prussia, Austria and Italy; and the same year it made its appearance in England, Scotland and Ireland. In 1832, in the month of March, it appeared in Dublin, and in May, in Paris.

Its first appearance in the New World, was in June, 1832, at Montreal and Quebec, and during its prevalence the mortality was great.

Since its appearance on our shores it has been almost periodical, visiting a place in its epidemic form once in sixteen or seventeen years, and remaining from one to three years, during the hot months of the year, if it found a soil congenial for its germs to propagate in.

Epidemic cholera has appeared in St. Louis twice* at an interval of about sixteen years. On its appearance in 1849, there were some 65,000 inhabitants in St. Louis. It is thought some 15,000 left the city; the statistics give the mortality at 6,000.

Let us compare the mortality of St. Louis with Boston and Baltimore, where strict sanitary laws were enforced in the same years. Boston appropriated a sum of money sufficient to cleanse and purify the streets, alleys and yards. The work was done thoroughly and effectively.

* *Three times.*—First in 1833 and 1834. We have little more faith in the sixteen or seventeen-year periodicity of cholera than we have in the "forty-year flood of the Mississippi."—Ed. St. Louis M. & S. Jour.

In St. Louis no attempt was made to remove the filth, or in any way to improve the sanitary condition of the city, except what may have been done by a few individuals on their own premises.

Now compare the results. Boston, out of a population of 140,000, lost but 327 by cholera, from all causes, 5,000—while in St. Louis, with less than 65,000 inhabitants, 6,000 persons died of cholera alone.

In Baltimore $40,000 was appropriated by the city council, for the work of purification, in anticipation of the coming epidemic. The result was, that out of a population of 160,000, but 853 died of cholera. Showing, I think, conclusively, that cholera can be prevented from appearing in an epidemic form.

I was in New York when epidemic cholera prevailed in 1850, 1851 and 1852. It was the last of September when the cholera broke out in an orphan asylum. The Superintendent took the orphans out on a picnic, and immediately on their return the cholera attacked them in a very malignant form. The Superintendent and some thirty out of ninety cases died. I think the great mortality in the asylum was in consequence of worthless nurses (as they had to depend on the alms-house for nurses on that occasion), badly ventilated rooms, and not separating the sick from the well. I was a student of medicine, and helped to take care of them, and formed a very unfavorable opinion of the curative properties of medicine in epidemic cholera at that time. In 1866, when the cholera attacked the inmates in any of the public institutions and hospitals in New York, they removed them to wards by themselves, and they disinfected the wards, and the consequence was, there were very few cases compared with former epidemics. I was one of the Ward physicians of the Sixth Ward, in St. Louis, in 1866. Our Ward extended from the levee to the city limits west.

The cholera that year was confined mostly to the crowded tenement buildings on the principal streets and alleys. There were a few cases in the western portion of the city, where the buildings stood isolated, and it was thought by some, it was in consequence of drinking the well water in those localities that were subject to surface drainage.

Its second appearance in an epidemic form in St. Louis (as you all know) was in 1866. I have not the statistics of the number of cases and deaths at its last visitation in St. Louis, but there were not as many, according to the number of inhabitants, as in 1849. But I believe we had more cases than there were in New York in the same years, 1866 and 1867.

According to the statistics of the Board of Health for New York and Brooklyn, they only had 1,909 cases of cholera in the year 1866; they do not give the number of deaths for that year. In 1867 they only had twenty-seven deaths from cholera. And I

think it can be attributed to the great vigilance of the Board of Health of New York, that it was prevented from making such ravages as in its former visitations in that city. Now, unless there is a new departure in the periodicity of epidemic cholera, we need not fear another visitation of it again until 1882 or 1883, and not then if there is a strict observance of sanitary laws and hygiene.

We stated in the former part of this paper, that there were great floods, converting immense tracts of land into swamps. And as the water subsided, the flooded districts were drained, foul vapors arose everywhere, from decomposing vegetable and animal matter, made more horrible and poisonous by the odor of putrefied corpses, the victims of floods, famines and earthquakes.

It is probable that the atmosphere thus contaminated, gave origin to the *Black Death*, whenever the organs of respiration came in contact with it. At a later period it was stated that its origin in several instances, was traced to the pilgrims, who visited the banks of the Ganges, in the observance of their religious rites.

And still later, the havoc committed by the epidemic at Alexandria, suggested official inquiries, and the President of the Board of Health addressed a communication on the subject to the Minister of Foreign Affairs. In this paper it is stated as the opinion, not only of the President himself, but of all the scientific and professional authorities in Egypt, that the poison is generated by crowds of pilgrims periodically visiting the holy places of Arabia. The pilgrims congregate at certain periods of the year, from all parts of the Mohamedan World, to the number of seven or eight hundred thousand.

It is ever a point of religion with them that no pilgrim should change his clothes during the whole time of his pilgrimage. Under these conditions they are huddled together in enormous crowds beneath the fiery sky of the desert. It is an indispensable incident of the ritual that each pilgrim should sacrifice at least one sheep, and the skin and offal of these countless victims are left to decompose under an Arabian sun. The result of all this is that thousands of pilgrims perish on the spot, leaving their bodies to be shuffled hastily under a coating of sand which the first sirocco will disperse; and their clothes to be packed up and carried off as relics to be distributed among their relations and countrymen. The Egyptian minister thinks that here is the seed-plot and hot-bed of cholera.

It will scarcely be questioned that epidemic cholera is a disease originating in a specific principle pervading the atmosphere; this, acting in combination with miasmata rising from the earth, creates a positive poison, and this is productive of the same results wherever it comes in contact with the vital organs.

But while it produces but one disease there are distinct stages of the same, the different stages, in some cases, being more or less

merged into one; but in nearly every instance the peculiarities of each are plainly observable. How this atmospheric poison originates, or in what manner it attacks the system, we can only venture to express our opinion. It may act indirectly through the nervous system, thence affecting the organs of sympathy and sensation. Some distinguished medical gentlemen contend that it enters through the medium of the lungs. The discussion of the subject must be, after all, a mere matter of speculation, as it is not known how it enters the system. Neither is the nature of the cholera-poison known. The fact, however, is well known that a malarious poison does exist, and that, combined with local causes, it operates with deadly power. By imprudence in living, fatigue, want of sleep, gorging the stomach with food, stimulating the brain with alcoholic drinks, giving way to fear, or, in fact, any irregularity having a tendency to derange the course of nature, the magazine is prepared with explosive material, only waiting the epidemic match to hurl its victims to destruction.

How shall we prevent epidemic cholera? In reference to this subject the first thing to be considered is the fact that cholera is dependent primarily on atmospheric conditions, and proximately on local conditions, impure air being the most conspicuous. The mysterious principle, whatever it may be, generated in the great crucible of nature—whether in the jungles of India, the simoons of Arabia, or the craters of Vesuvius—may be carried on the wings of the wind over the surface of the earth, without producing more than a slight disturbance of the functions of animal life, manifested in a tendency to disease of the bowels, and general depression of the vital powers. Another poisonous principle is generated in the laboratories of terrestrial filth. Every city and town sends up its deleterious gases, its disease-laden malaria, which combines with the poisonous principle with which the atmosphere is already impregnated, and thus a compound is generated, which may be the fatal cholera-poison.

Predisposition and susceptibility favor the operation of the prevailing cause, therefore sanitary measures should be promptly instituted for the thorough purification of these gas-generating foci all around us in full blast; from the offal in vacant lots; from the alleys reeking with pollution; from the gutters and back yards of tenement houses.

This is where sanitary labors should begin. Competent sanitarians in every community, great or small, should inspect this work.

Timely and thorough *cleansing* and *disinfecting* is what "stamp out" Asiatic or sporadic cholera, better than any other means yet known to civilization.—*St. Louis Med. and Surg. Journal.*

On the Mechanism of Production of Symptoms of Diseases of the Brain. By C. E. Brown-Sequard, M.D., New York.

It is my intention, in this first or introductory paper on diseases of the brain, to glance over the whole field of symptomatology relating to that organ, with the purpose of showing that we must give up as absolutely false most of our generally or universally admitted notions as regards the physiology and semeiology of the brain, and that new views must replace these old and effete notions. The advance of our knowledge in the symptomatology and the therapeutics of brain disease has long enough been barred by the generally accepted theories, which, as I will try to show, are completely erroneous. There is no important progress possible in the study of that subject, either for practice or science, unless we draw back and enter an entirely new path.

Since I began to study medicine, in 1838, the subject of this paper has constantly attracted my attention, and I selected it as the theme of the six Gulstonian Lectures I had the honor to deliver, in 1861, at the Royal College of Physicians of London. Since the last date I have made much progress in collecting arguments against the old and generally admitted views, and in building up the new theories I have to establish.

In this first paper I will merely give an outline of the different elements of my subject, but I shall take them up individually afterwards and study them at full length in as many papers or in a complete work. This paper will be divided into four parts.

PART I.—VIEWS GENERALLY ADMITTED AS REGARDS THE ORIGIN OF SYMPTOMS OF BRAIN DISEASE.

I will first sum up briefly what is universally or generally admitted, and then give a short account of views which are accepted by a great many able men in this country and in Europe.

1. The nervous system is composed of two lateral halves, arranged so that the right side of the brain is the centre for the left side of the body, being for it the seat of the will and of the perception of sensations; while the left side of the brain is the centre for the right half of the body.

2. The conductors of the orders of the will to muscles coming from the brain, decussate, chiefly if not entirely, in the lower part of the medulla oblongata, so that those from the right half of the brain pass into the left side of the spinal cord, and *vice versa*.

3. The conductors of sensitive impressions from the whole right side of the body, in their way to the left side of the brain, and those from the left half of the body going to the right half of the brain, decussate, either entirely in the spinal cord and medulla oblongata, as I have tried to prove since 1849 (a view which I have

been compelled recently to modify notably), or in those parts and in the pons Varolii, as many physicians, not knowing my arguments, yet admit.

4. One of the lateral halves of the brain is the seat of the perception of visual sensations, either for the whole eye on the other side (according to one view), or for the external half of the one eye and the internal half of the other (according to Wollaston's theory).

5. The vaso-motor nerves arise chiefly, if not entirely, from the medulla oblongata (Moritz Schiff, C. Ludwig, Soboroff, and others). They decussate partly in the spinal cord, partly in the medulla oblongata (M. Schiff).

6. The respiratory movements depend on conductors arising from the medulla oblongata, and descending without decussation along the spinal cord.

7. Certain limited parts of the brain have certain kinds of functional activity, as, for instance, the left third frontal convolution and neighboring parts, which are said to be the seat of the faculty of expressing ideas by speech,—the tubercula quadrigemina, which are considered as the centres for visual sensations, etc.

8. Symptoms such as diminution of intelligence, and the various disorders of that faculty in insanity; aphasia; loss of power of voluntary movements; anæsthesia; loss of the higher senses, etc., *are due in a direct way* to those alterations of tissue in the places where we find organic disease in the brain after death. In other words, these symptoms are explained by the assertion, *that the part diseased* (either by pressure or otherwise) *has lost its function.*

9. Delirium, convulsions, and some other active manifestations in cases of disease of the brain, *are due also in a direct way* to the irritation of the part of that organ where an organic alteration is found after death. In other words, the symptoms are explained by the assertion, *that the part diseased has had its vital property or properties morbidly put in play.*

I consider as erroneous not only the above generally admitted views, but also many others less generally received, but maintained by many able physiologists and physicians. Among these last opinions the following deserve notice: 1st. Todd and Bowman, and after them W. B. Carpenter, Broadbent, and others, have considered the corpora striata as centres for the voluntary movements, and the optic thalami as centres for sensations; 2d. Broadbent, in an excellent paper,* has propounded the view that one of the corpora striata is sufficient to act on the muscles of the trunk, neck, and some other parts on the two sides, explaining in that way the numerous cases in which these muscles escape paralysis in diseases of the brain; 3d. Various hypotheses have recently been put for-

* The British and Foreign Medico-Chirurgical Review. London, April, 1866, p. 468 et seq.

ward by Broadbent, Meynert, and Luys, to explain the mechanism of action of the brain in health and disease. The views of Meynert are ably expressed in an article by one of his pupils, Dr. James J. Putnam, of Boston, in this No. of these Archives; 4th. The efforts made by Nothnagel, Wilks, Meynert, J. Hughlings Jackson, and others, to localize the central cause of epilepsy and epileptiform convulsions in certain parts of the brain; 5th. The efforts of Duckworth, J. H. Jackson, and others, to localize the central cause of chorea in the corpora striata or the optic thalami; 6th. The efforts of R. Dunn, W. B. Carpenter, Ph. Lussana,* J. Hughes Bennett and others, to localize the muscular sense in the cerebellum.

I will not say more now on the views propounded or held by the ablest physiologists and physicians of our times on the general pathology of the brain; I will show hereafter how erroneous or incomplete they are.

PART II.—VIEWS WHICH I CONSIDER AS WELL ESTABLISHED OR MOST PROBABLE AS REGARDS THE PHYSIOLOGY AND THE PHYSIOLOGICAL PATHOLOGY OF THE BRAIN.

I will simply say now, that the following points are already well established or extremely probable, and in perfect harmony with all the facts I know.

1. The brain is a completely double organ, each of the hemispheres being a whole brain in itself, not only for mental actions as ably maintained by Sir Henry Holland,† and by Dr. A. L. Wigan,‡ but also for every other function (volition, intellectual perception of sensations, etc.) known to belong to the various parts of the central mass of nervous tissue named encephalon.

2. Originally no marked difference exists between the right and the left hemispheres, each of them being in newly-born children almost as well able by natural development and future exercise to acquire all the functional powers of the brain; but as one of the two hemispheres, being sufficient for certain functions, is exercised more than the other, it comes to be much more apt than the other to execute these functions. This view, ably maintained by Dr. W. Moxon,§ and accepted by my eminent friend Dr. P. Broca, so far as the faculty of speech is concerned, is just as well grounded, as I will show hereafter, for the power of volition on the muscles, and for several other functions of the brain.

3. The communications between muscles and the brain as centres for volition take place in a normal state by two (if not more)

* Journal de la Physiologie de l'Homme, etc. Vol. v, 1862, p. 427.

† Chapters on Mental Physiology. London, 2d Ed., 1858, Chap. VII, p. 179.

‡ A New View of Insanity.—The Duality of the Mind. London, 1844, *passim*.

§ British and Foreign Medico-Chirurg. Review. London, April, 1866, p. 481.

distinct sets of conductors, one passing from a lateral half of the brain to the muscles of the corresponding side in the trunk and limbs, and remaining in all their length in the same side of the cerebro-spinal axis; the other set (or sets) decussating with the homologous set, coming from the other side of the brain, and going to the muscles of the trunk and limbs on the opposite side.

4. The decussation of the conductors serving to voluntary movements takes place not entirely or even chiefly where most physiologists and physicians (including myself, up to some time ago) believe it to occur, *i. e.*, in the lower and front part of the medulla oblongata; but all along the median plane of the cerebro-spinal centre, from the crura cerebri to the lumbar extremity of the spinal cord, including, of course, the pons Varolii and the medulla oblongata.

5. The transmission of sensitive impressions, coming from one of the lateral halves of the body, takes place also by at least two sets of conductors, one going up to the brain in a direct way, *i. e.*, remaining in the corresponding half of the spinal cord and of the brain, while the other passes into the other half of these nervous centres, decussating all along the spinal cord and medulla oblongata with the homologous conductors coming from the opposite side.

6. The decussation of these last conductors takes place, as I have tried to prove since 1849, along the median plane of the spinal cord for the trunk and limbs, and of the encephalon for the nerves of general and special sensibility arising from that part of the nervous centres.

7. Very few conductors, direct or decussating, are sufficient for complete communication between the brain and the spinal cord, for sensibility and voluntary movements. These communications take place not by mere prolongations of the nerve-fibres of the motor and sensitive roots of the spinal nerves, after they have reached the cells of the spinal cord, but by a very small number of conductors, going from groups of these last cells to groups of brain-cells.

8. The vaso-motor nerves arise from many parts of the nervous centres (including the ganglions of the sympathetic). The medulla oblongata is the principal place of their decussation. The pons Varolii is the chief centre from which they originate, either for the viscera* or for the trunk and limbs.

9. The respiratory movements have their centre in the spinal cord, the pons Varolii, and other parts of the encephalon, as well as in the medulla oblongata. Ganglions in the diaphragm participate in the production of these movements.†

10. Symptoms of diseases of the brain are of two distinct

* See my paper on Hemorrhages due to a nervous irritation, in this Journal, p. 148.

† See the January No. of this Journal, p. 97.

classes: those which arise from an influence exerted on distant parts by an irritation of the diseased part (indirect symptoms), and those produced in a direct way, either by the loss of function or the irritation of the part diseased. The first class will be observed in all cases of diseases of the brain which produce symptoms. This first class will co-exist with the second in most cases of disease of the base of the brain; but it exists alone in cases of disease located in the cerebral lobes, the cerebellum or its peduncles.

11. The indirect symptoms are of two kinds, both arising, however, from an influence exerted on distant parts by an irritation starting from the organic lesion that we may see after death. Of the first kind are those symptoms due to a paralyzing or inhibitory influence; and of the second kind are those in which, instead of a cessation of activity, there is on the contrary the manifestation of a morbid activity.

12. To the group of indirect (inhibitory or arrestatory) symptoms belong the various kinds of cessation of activity which I have to study in the paper now in course of publication in this Journal (see January No., p. 88), including the loss of voluntary movements, anæsthesia, amaurosis, aphasia, loss of consciousness, loss of the power of controlling the sphincters, etc. I will show in that paper that all these kinds of cessation of activity take place in the same way as the arrest of the heart when the par vagum is galvanized.

13. To the group of indirect production of a morbid activity belong delirium, convulsions, and other active disorders of muscular movements.

14. The mechanism of production of the indirect symptoms of an organic disease of the brain seems to be identical with that of the reflected symptoms due to the irritation of peripheric nerves in the bowels, the lungs, the skin, or in other parts of the trunk and limbs. To be more complete, I ought to say that many nerve-fibres, either in the mucous membranes, the skin, the viscera, the trunks of the various spinal or cranial nerves, the cerebral meninges, the ventricular membranes, and the different parts of the brain itself, seem to have similar properties, and to produce indirect symptoms under an influence exerted by their irritation on distant parts.

15. In the same way that an irritation of a peripheric nerve will sometimes produce no indirect symptom (*i. e.*, a symptom due to an influence exerted on distant parts), or will in other instances produce any one of the indirect symptoms (those of cessation of activity or those of production of a morbid activity), in that same way will a lesion of the brain, extensive or not, produce no indirect symptom, or engender any one of the many indirect symptoms.

16. The above being admitted, it is easy to understand all the

differences that may be found as regards symptoms of organic diseases of the brain. It is easy to understand how a paralysis can occur on the side of the brain lesion or on the opposite side; how a paralysis can appear suddenly and be complete although the lesion is small, and located in a part which cannot by any one be considered as the seat of the will, or containing the conductors for the voluntary movements of the part paralyzed; and how also a paralysis can disappear suddenly, although the brain lesion that gave rise to it still remains. It is easy to understand why there is no relation whatever between the extent, the kind, the seat and the rapidity of apparitions of an organic disease of, or an injury to, the brain, and the symptoms that may appear. I stop here, as I will have in the next part of this paper the opportunity to show that the old views are absolutely wrong, and that the theories I hold are in perfect harmony with the most important facts relating to the symptomatology of the organic affections of the brain.

In the next part of this paper I will also show that all the attempts heretofore made to localize certain functions or certain affections in special parts of the brain have, till now, been complete failures.

[*Second Article.*]

In the first article on this subject I have given the views universally or generally admitted concerning the origin of symptoms of brain disease, and also the views that I hold. I will, in this second section of my paper, give, first, the reasons that have led me to reject the old theories relating to this subject and to adopt the new views I propose, and then I will study the various modes of production of symptoms of disease of the brain. But before entering into the discussion of these important topics there are two points of great interest on which I have to say a few words.

(A.) I think the following statements may help the reader to understand more fully, and much more easily, the new views I try to establish :—

1. If we compare the symptoms produced by an irritation, such for instance as that of one of the lungs, or of the part of the base of the brain where the trigeminal nerve is inserted on the pons Varolii, or of the cerebral meninges, with the symptoms caused by an irritation of any part of the brain, we find that in either of the groups of cases we compare there may be paralysis produced in the corresponding or on the opposite side of the body, and, besides that, almost any of the symptoms of disease of the brain. On the other hand we find also, and in many cases, that no symptom of brain disease will appear, notwithstanding an organic disease in the cerebral lobes, in the base of the brain, in the cerebral meninges, or in the lungs.

2. Led by facts like the above, and by many others, I have necessarily come to the conclusion that there are nervous elements in the various parts of the cerebral lobes, in the corpora striata and optic thalami, in the crura cerebri and other parts of the base of the encephalon, which, like the nervous elements of the cerebral meninges, of the various viscera, the skin, the mucous membranes, the trunks of nerves, etc., have, when irritated, the power of producing on some part of the nervous centres—either at a short or at a very great distance from the seat of the irritation—changes in the normal state of activity of that part.

3. These changes may consist: *a*, in a *cessation of activity*, showing itself according to the part so affected by aphasia, agraphia, amnesia, paralysis, anæsthesia, amaurosis, anosmia, deafness, loss of taste, cardiac syncope, arrest of breathing, or a suspension of the interchange between tissues and blood; *b*, in the manifestation in a morbid form of the activity of certain parts of the nervous centres, producing delirium, convulsions, the so-called referred sensations, alterations of nutrition, etc.

4. In cases of alteration of the blood there is undoubtedly an influence of some poison on many parts of the brain and spinal cord, but there is also sometimes an irritation upon certain limited parts of the encephalon, propagated from them to other parts, just as in the case of a local organic disease, or just as in the case of an affection of the bowels, the lungs, the cerebral meninges, etc.*

5. From all the above statements, and from the study of every symptom of brain disease, I have drawn the conclusion that all the parts of the brain resemble the peripheric parts of the nervous system, in being able, under irritation, to act on any other of its parts, modifying their activity, so as to destroy, or diminish, or to increase and to morbidly alter it.

(B.) Independently of the old views which I criticise, and of the new views I try to establish, there are several well-demonstrated ways of explaining the production of symptoms in certain cases of brain disease. I will only say a few words about them here.

1. There is no doubt that alterations in the quantity or quality of the blood may cause symptoms of disease of the brain. I hardly need to name anæmia, congestion, the various kinds of toxæmia (uræmia, cholesteremia, oxaluria, etc.), among causes acting sometimes or generally on the whole mass of the brain. But local anæmia, local congestion, embolism, thrombosis (in an artery or a vein) act exactly like a wound, a hemorrhage, a tumor, as regards the mechanism of production of symptoms; and the criticism of the old views I will enter into hereafter, applies as well

* See the curious cases of *loss of speech caused by the bites of venomous snakes*, by Dr. William Ogle, in St. George's Hospital Reports, London. Vol. iii, 1868, p. 167.

to local changes in the amount of blood in the encephalon as to any local organic affection of that nervous centre.

2. A general pressure can, of course, destroy in a direct way the functions of the brain, but what I have just said about the amount of blood applies also to pressure. When it is localized it produces symptoms not according to the teachings of the old theories, but by the mechanism which I have pointed out for local organic affections of the brain.

3. There is no doubt that a considerable alteration of the whole extent of the cortical parts of the brain will affect the mental faculties in a direct way, *i. e.*, as taught by the old theories.

4. A propagation of organic alterations from the seat of an original lesion in the brain can, of course, give rise to symptoms. But we cannot explain the appearance of symptoms in that way in most cases of hemorrhage, of wound, or of softening of the brain, as it requires more time for the propagation of a morbid state to distant parts of the brain than there is between the moment the lesion takes place and of that apparition of symptoms. Even in cases of tumors enlarging slowly, we cannot look upon such a propagation as the essential cause of appearance of symptoms, as there are many cases of tumors in which there is no such propagation of a morbid state. R. B. Todd* considered that, when the surface of the brain was diseased, symptoms appeared only after the propagation by the cellular-tissue to the base of that organ. He only made a supposition that it was so. There are positive facts showing that a sudden lesion of the surface of the brain may at once cause symptoms (paralysis, loss of one or more senses, or convulsions, as well as mental disturbances). Then, of course, the symptoms cannot be due to an organic change extending to the base of the brain.

Another kind of propagation first discovered by L. Turck—studied since with great care by Prof. Charcot, by Bouchard, and others—consists in a peculiar degeneration, which progresses from the seat of a lesion in the corpus striatum or its neighborhood, down to the medulla oblongata on the same side, affecting in this last nervous centre the anterior pyramid, and with it passing into the lateral column on the other side of the spinal cord. Charcot and Bouchard have shown that even the nerves on the opposite side to that of the lesion in the brain may be degenerated. No doubt that in such cases the descending alteration must participate in the production of symptoms; but in these cases, also, the symptoms of brain disease appearing at once after a lesion of the encephalon cannot be due to this secondary alteration.

5. Two very able physicians, Prof. Vulpian† and Dr. Clifford

* Clinical Lectures on Paralysis, Disease of the Brain, etc. London, 1854, p. 49.

† Comptes Rendus de la Societe de Biologie, 1861, p. 38.

Allbutt, have had the idea that certain symptoms of brain disease may be due to an influence exerted by the diseased part of the encephalon on the secreting membrane of the lateral ventricles, producing an effusion of serosity. I will merely say, that although I agree with them in looking on such an influence as able to produce sometimes that effusion, there are two decisive reasons against giving to such a cause a great power. In the first place, we not rarely find a good deal of serosity in one or in both lateral ventricles without any symptoms; and in the second place, there are a great many cases of disease of those parts of the encephalon pointed out, by Prof. Vulpian and Dr. C. Allbutt, with such symptoms as they mention (amaurosis, paralysis on the side of the brain lesion, etc.), without any increase of the ventricular fluid.

PART III.—SIGNIFICANCE OF THE GENERAL SYMPTOMATOLOGY OF BRAIN LESIONS.

Under this title I only intend to give a brief outline of the semeiology of the brain, with the double purpose of showing how completely it disagrees with the old or generally admitted views, and how much also it agrees with the new views mentioned in the preceding part of this paper. What I have to say on this subject, I will condense in a number of propositions, the demonstration of which I will try to give.

PROPOSITION I.—*Lesions of a very small part of the brain often produce very marked symptoms.*—It is well known that lesions, limited to only a small part of the brain, will frequently produce symptoms. It would be easy to show that there is not one single small part, not only of the base of the brain, but of the three cerebral lobes—of their white or of their gray matter—which, being the seat of a lesion (hemorrhage, softening, or any other), has not sometimes produced marked symptoms, and, among others, paralysis. It is evident that the old theory of production of symptoms of brain disease is absolutely unable to explain such facts. The only way to get out of the difficulty is to suppose that the autopsy has not been well made, and that a lesion, not discovered, existed somewhere else than the one found, and that this supposed lesion was the cause of the symptoms. It is, of course, quite possible, if not certain, that real organic lesions have frequently escaped notice; but it would be a purely gratuitous supposition to admit that it always has been so in the very large number of cases in which only a small lesion has been found in the cerebral lobes in the bodies of persons who had had decided symptoms of brain disease. If we take the view I hold, that nerve-cells or nerve-fibres, or both, in the brain-tissue, like nerves of the bowels or other peripheric parts, possess, when irritated, the power to act on more or less distant parts of the nervous centres, and either mor-

bidly put in play their vital properties, or stop or alter their functions, there is no difficulty to understand that any symptom of brain disease may arise from a lesion of a single circonvolution, or any other small part of the brain. As regards these two great points, *i. e.*, the lack of symptoms or the production of either one or another of the symptoms of brain disease, the history of cases of organic cerebral affections is similar to that of cases of worms in the bowels.

Prop. II.—*Extensive lesions may exist in the brain without marked symptoms.*—On the one hand, as above stated, a trifling lesion can produce decided symptoms, while on the other, extensive lesions may either exist without symptoms or produce only trifling effects. I will only mention here a few of such cases, and, in a special paper on this point, I will show that there is no part of the brain which has not sometimes been considerably altered or destroyed without the appearance of symptoms. Even the medulla oblongata, the pons Varolii, the crura cerebri, the corpora striata, the optic thalami, and the third left frontal convolution, have been found diseased in cases in which the symptoms (such as paralysis, anæsthesia, or aphasia), which ought to have shown themselves, had not, however, appeared.

Let us only study a few facts. Abercrombie,* whose accuracy cannot be denied, relates a case in which neither aphasia nor paralysis had existed, although almost the whole of the *left* hemisphere was considerably altered or destroyed. Here are his own words: "The brain externally appeared healthy; but when a thin section was cut from the upper part of the *left* hemisphere, a cavity was exposed, through which a probe passed in every direction without any resistance, through nearly the whole extent of the hemisphere. This arose from the whole hemisphere being in such a remarkable state of decomposition, or softening, that it formed one great cyst, full of soft, pultaceous matter, inclosed in a very thin covering, formed by the healthy cerebral matter on the surface. The healthy portion forming this covering in many places did not exceed a quarter of an inch in thickness, and at the thickest parts, which were on the upper surface of the brain, did not exceed one-half or three-fourths of an inch. The contained matter was a thin, soft pulp, mixed with portions of a pellucid, albuminous substance, which coagulated when thrown into boiling water. This matter was chiefly in irregular masses, but there were some finer portions of it which could be separated in the form of distinct round nodules, resembling hydatids. They were, however, only uniform masses of albuminous matter in a more concrete state. On the external part of the hemisphere, lying over the

* Pathol. and Practical Researches on Diseases of the Brain, etc. Edinburgh. 4th Edition, 1845. Pp. 176—178.

petrous portion of the temporal bone, there was a tumor the size of a pigeon's egg. The left ventricle was entire; it contained a small quantity of serous fluid, and was separated from the diseased mass by a very thin septum. The *left* hemisphere had been considerably enlarged, and the right diminished in the same proportion, the falx being sensibly pressed towards the right side."

In this decisive case all communication between the base of the brain and what remained of the superficial parts of the brain was cut off, and still there was no aphasia, no paralysis, no anæsthesia. For many years the brain had been diseased, as evidenced by various symptoms which had appeared and ceased (attacks of giddiness, of general rigidity, vomiting, amaurosis of the *left* eye, etc.). The patient was found dead one morning, after having been so well that she had spent the preceding evening with a party in the house of a friend.

As regards the part of the brain above the lateral ventricle, I will only mention one more case. It was observed by one of the ablest of the living surgeons of Paris, Prof. Richet. It is in some respects more important than Abercrombie's case. In another paper I will give it entirely. I will now simply say that an abscess of from 200 to 300 grammes (from seven to ten ounces) of greenish or milky pus had destroyed the middle lobe almost entirely, and a good part of the posterior lobe of the right hemisphere, and that the right lateral ventricle was filled with pus, and the right optic thalamus and corpus striatum were partly destroyed. Death occurred suddenly: the patient had had no paralysis, no anæsthesia, no convulsions, no intellectual deficiency.* For cases analogous to that one, I will refer to an excellent paper of my able friend, Dr. J. B. S. Jackson,† and to Dr. R. Bright's great clinical work.‡ In another paper, the publication of which I began in a preceding number of this Journal, on new kinds of hemiplegia, I gave several cases showing that a lesion of the base of the brain, instead of producing the ordinary crossed paralysis, may cause palsy in parts of the trunk and limbs where this loss of motor power should not be, according to the generally admitted theories.

I will only add that the medulla oblongata, the part of the nervous centres which is by far more able than any other to cause sudden death, when suddenly injured (and even very slightly sometimes), is also a part which can bear the greatest alteration without paralysis or anæsthesia in limbs.

Prop. III.—*There is no relation whatever between the extent of a lesion in the brain and the production of symptoms.*—On the one hand,

* See Alphonse Champsaur's thesis: De l'affection tuberculeuse du rocher. Paris, 1862, p. 30.

† See Boston Medical Journal, Vol. lxii, May, 1860, p. 353 et seq.

‡ Reports of Medical Cases. London, 1831, Vol. ii, pp. 151—165.

if we consider what has been said above, trifling lesions can produce decided symptoms; and, on the other hand, most extensive lesions, never mind where located, may produce neither paralysis nor anæsthesia, nor intellectual disturbances (aphasia, insanity, etc.). This can be expressed in other and perhaps more forcible words: *There is no relation whatever between the extent of a lesion in the brain and the symptoms that may be caused by it.* If symptoms were due, as is admitted, to the loss of function of the part altered or destroyed in the brain, or to *immediate* effects of the irritation of such a part, there would be a constant relation between them and the disease, so that the intensity and extent of the symptoms would be in proportion with the intensity and extent of the alteration.

Prop. IV.—*Symptoms of brain disease may exist without the least visible organic alteration of the brain.*—That paralysis, anæsthesia, or any other symptoms of disease of the brain may appear when that organ is without any organic disease, is a well-known fact, grounded on many cases in which a sudden or rapid cure was obtained after the cessation of a peripheric cause of irritation (the expulsion of worms, for instance), or in cases in which the autopsy has shown no alteration in the tissue of the brain. With the views I hold, this can be explained easily: the two kinds of symptoms (those of cessation of activity, *i. e.*, the inhibitory or paralyzing, etc., as well as those of irritation manifested by the morbid actions of parts of the brain (such as delirium, convulsions, etc.),—the passive and the active symptoms are due to the influence exerted by an irritation starting from a diseased organ upon certain parts of the brain, causing in some of them a cessation of activity, and in others, producing, on the contrary, a manifestation of activity.

The mechanism of production of symptoms of brain disease, as I have already said, and as I will, I hope, succeed to show in a special paper, is identically the same, whether the cause is in the bowels, or in any thoracic or abdominal viscus, or in the meninges of the brain, or in any part of the brain itself. The symptoms are not the *immediate* or *direct* effects of either the cessation of function or a morbid action of the part diseased. Wherever is the lesion which is the prime mover in the causation of symptoms, it entirely or at least partially produces them *mediately* or *secondarily*, or *indirectly*, and through the agency of an irritation starting from the seat of the lesion and acting on other parts which in a direct way give rise to the morbid manifestations.

Prop. V.—*The symptoms of brain disease may cease at the approach of death.*—This fact, which has attracted the attention of many able men, among others, Sir Henry Halford,* Guislain,† and Dr.

* Essays and orations read and delivered at the College of Physicians. 3d Edit. London. 1842. Pp. 17—20.

† Traite des Phrenopathies. 2d Ed., Bruxelles, 1835, p. 61.

R. La Roche,* cannot be explained by the generally admitted theory, while it is in perfect accord with my views. Not only just before death, but sometimes a little while before, symptoms of disease of the brain, depending on an organic disease of that nervous centre, will disappear more or less suddenly and completely. Admitting that they were produced indirectly, or mediately, or secondarily, and through the agency of an irritation starting from the seat of the lesion and acting on other parts, either to stop action or to generate it, we can easily understand that if the vital properties of the various parts of the brain (the part which is the seat of the lesion visible after death and also those parts acted on secondarily) are diminished in power from the diminution of circulation and hematosis which precedes death, it is natural that a cessation of the morbid manifestation of these properties should occur.

PROP. VI.—*A lesion of the brain can produce a cessation of symptoms of brain disease.*—There are facts on record showing that symptoms of brain disease may disappear after a considerable lesion of the brain. Thus in a case of insanity and epilepsy there was almost a complete cure after a fracture of the cranium and the issue of a notable quantity of brain tissue.† In another case there was improvement of the mental power after a lesion of the right side of the brain.‡ I know a case of a very intelligent gentleman, son of a most eminent statesman, who was naturally very reticent and who disliked to talk. After a fracture of the cranium just below the level of the left third frontal convolution, instead of losing speech, he came to be very fond of talking. Leaving this last case aside, the others, at any rate, cannot be explained by the generally admitted views, while they can easily be understood if we adopt the views I hold.

PROP. VII.—*An immense variety of symptoms in different individuals may be caused by a lesion in one and the same part of the brain.*—Symptoms of brain disease vary immensely, not only in intensity as stated already, but also in their kind, although the lesion producing them occupies the same place. This we witness most frequently. All the forms of convulsive affections, chorea, catalepsy, epilepsy, etc., all the varieties of mental disorder, all the differences in degree and location of paralysis, of anæsthesia and the various alterations of the senses, etc., have been observed in cases of disease of any one of the various parts of the base of the brain, and most of these symptoms have been observed in cases of disease of either the anterior, the middle, or the posterior lobes

* Journal of Psychological Medicine. New York. Vol. iii, p. 119 et seq.
† Gazette Medicale de Paris. 1844, p. 76; and another case, 1832, p. 95.
‡ Journal des Progres des Sciences et des Inst. Medec. Paris. Vol. xvii, p. 252.

of the brain. Are we to admit that each part of the brain possesses all the properties (normal or morbid) and all the functions of that great nervous centre? But if so, as we see that in some individuals there is no symptom at all, in others one symptom or another, we should have to conclude that one and the same part of the brain in some individuals is endowed with certain properties and functions, while in others it possesses entirely different properties and functions, and in others again, it does not seem to possess either a property or a function. The only rational explanation is, that in the same way that an irritation of any peripheric nerve* may either be insufficient to produce a remote effect, or quite able, on the contrary, to produce the most varied effects, a disease in any part of the brain may also be the starting-point of either an inefficient irritation or act, by means of that irritation on distant parts, and produce through them either kind of symptoms.

PROP. VIII.—*The same symptom may originate from the most various lesions.*—As regards the kind of lesions as well as concerning their extent and location, the most various organic alterations may produce the same symptom. Here, also, we can ask therefore: Are we to suppose that each part of the brain is endowed with the same vital properties and functions as all the others, and still more, as we know that what takes place for one symptom occurs also for every other, are we to suppose that every part of the brain can and does possess every property and every function of the whole brain? Or, are we to admit that in one individual a certain property or a certain function belongs to one part, in another individual to another part, and so on in as many individuals, to as many parts of the brain which produce the same symptom when organically altered?

Of course these suppositions are absurd, and as the old theories I am trying to prove false, could not, without the admission of these hypotheses, explain the fact that a lesion anywhere in the brain can produce the same symptom, we must give up these old theories. On the other hand, if we take up the view I hold, that symptoms in organic diseases of the brain arise in the same way as in cases of peripheric irritation (in the bowels, the lungs, etc.), we can easily understand that the irritation, starting from the place where we find disease after death, can go to any other part or set of parts of the nervous centres and produce the symptom that appears. Take amaurosis, for instance, and we find that it can be produced either in one or in both eyes, whatever be the seat or the kind of a lesion in the cerebral lobes, in the base of the brain, or in the cerebellum. If symptoms arose according to the old theories, we would have to place the centre for visual perceptions

* See my article on the remote consequences of nerve-lesions, in Holmes' System of Surgery. London. 1870. Vol. iv, p. 184.

everywhere. This is, of course, inacceptable, while if we admit that there are nervous elements, in the various parts of the encephalon, endowed—in different degrees in different individuals—with the power of arresting the activity of either the nerve-cells of the retina or of those which constitute the centre for visual perceptions, we can easily understand how, according to the degree of that power, there is or there is not, under the irritation caused by disease, amaurosis of one eye or both eyes, just as we see this deficiency of the sense of sight either in the two eyes or in one in cases of irritation of the bowels by worms.

Prop. IX.—*A lesion of the same kind and extent on the two sides of the middle line of the brain may produce symptoms only in one-half of the body.*—This is a most powerful argument against the old views I am criticising. There are a number of such cases on record. Abercrombie (*Loco cit*, p. 103) gives the case of a child, 16 months old, who had hemiplegia of the right arm and leg, and in whose brain there were, apparently, equal lesions on the two sides: several ounces of fluid in the ventricles and an abscess in the substance of the medulla oblongata which appeared to occupy "its whole diameter," where it is crossed by the pons Varolii. Huguier has reported a case of a tubercle, the size of a walnut, imbedded in the pons Varolii, appearing to extend as much on one as on the other side of the middle line, and having produced paralysis on the right side only (*Bulletins de la Societe Anatomique*, pp. 52–53, vol. iv, 1829). Proust relates a case of hemiplegia of the left side of the face and limbs, caused by syphilitic tumors placed over the middle line opposite the chiasma of the optic nerves.—(*Medecine eclairee par l'ouverture des Corps.* Paris, 1804, vol. ii, p. 59.)

I could relate several other well-observed cases, among others one of Abercrombie (p. 101), in which there was an abscess in each of the corpora striata with anæsthesia in only one side of the body; and another of Poisson, in which there was facial paralysis on one side, from a lesion of the pons Varolii by effused blood in the 4th ventricle (*Bull. de la Soc. Anat.*, 1855, vol. xxx, p. 204), but I think these facts are sufficient to show how untenable is the old view that paralysis, in organic affections of the brain, is due to the loss of function of the part altered. Here we see the same extent and kind of alterations in corresponding parts on the two sides of the middle line, in organs which are considered as containing the conductors for voluntary movements, and instead of the same amount of paralysis in the two sides of the body, we find hemiplegia. If we admit the view I hold, that the paralysis depends on the inhibitory or arresting influence exerted on other parts by an irritation starting from the seat of the lesion, it is easy to explain how there can be paralysis on one side only. As we know that irritations vary considerably in their power in different individuals,

and in the same individual at different times, or in different parts of the body, or, besides, in corresponding parts of the two sides, we can easily understand that one side of the brain in the same individual will react powerfully under irritation, while the corresponding or rather the homologous parts on the other side will not react. Such a thing is not very frequent; but after all, if we consider that the nervous centres are double organs, a difference in the intensity of the excitability of one side, compared with that of the other side, is not more wonderful than the difference of the excitability of parts of the nervous system of one man compared with that of similar parts in another man.

PROP. X.—*Symptoms may appear indicating the existence of two lesions in the brain while only one exists.*—This has less value than the preceding proposition against the old view, because it can be said that another lesion existed which was not found. Still there are cases in which the nature of the lesion and the short duration of life after it had occurred, together with the known accuracy of the observer, leave very little doubt, if any, that symptoms which, according to the old theories, could only be produced by two distinct lesions, have been caused by one alone. In a case recorded by one of the late Presidents of the Royal College of Physicians of London, Dr. Thomas Mayo (*London Medical Gazette*, p. 16, vol. xxxix, 1847), a woman was stricken down by an effusion of blood in the *right* corpus striatum, and the autopsy showed no other lesion in the brain. The symptoms were: paralysis of the *left* limbs and of the *right* side of the face. My able friend, Dr. John W. Ogle, has seen just a similar case. The old theories cannot explain such cases except in admitting that although there was no lesion found elsewhere than in the right corpus striatum, there was one unseen causing the facial paralysis. If we admit my views, that paralysis in the face or limbs depend not on the loss of function of the part altered, but on an irritation of that part, and that an irritation on any part of the brain can produce paralysis either on the same side or the other, these cases can easily be explained. The patients in both of these cases had had an inhibitory arrest of the nerve-cells serving to the motion of the face on the side from which the irritation started, and an inhibitory arrest of the nerve-cells serving to the motion of the limbs on the other side.

PROP. XI.—*The two sides of the brain in adults react quite differently one from the other under the influence of irritations.*—This is in absolute opposition to the old theories about the physiology and symptomatology of the brain. As I will soon publish a special paper on this subject, I will only give now some of the conclusions arrived at by others or myself.

I will first speak of the left half of the brain, or rather, as it should be called, the left brain. I hardly need to say that aphasia

and agraphia belong chiefly to the semeiology of the left brain. It is to Dr. Dax, Sr., that is due the merit of the discovery of this difference between the two brains,—the first difference pointed out between these two organs. But Dax committed the fault to consider this difference as absolutely constant. It is not so, as there are already on record (according to my own limited knowledge) more than thirteen cases of aphasia due to disease of the right brain with hemiplegia of the left limbs, and in one, at least, of these thirteen cases the patient was not left-handed.

Another symptom belongs also chiefly to the left brain: it is that a difficulty of articulation, or, in other words, a mechanical impairment of speech exists more frequently in affections of the left than in those of the right brain. This, to my surprise, although quite evident, has not been pointed out by any one except my former assistant, who has now risen so high, Dr. J. Hughlings Jackson.—(*London Hospital Reports*, Vol. ii, 1866, pp. 314–15.)

A third symptom belongs also more frequently to alterations of the left brain than to those of the right; it is insanity in its various forms. Acute delirium, however, seems to be more frequent in cases of disease of the right brain than in cases of disease of the left.

The right brain differs considerably from the left, not only by its being less frequently the cause of the three above-mentioned symptoms, but by its being more frequently diseased when the following symptoms exist:

1. Hysterical symptoms appear by far more frequently in the left than in the right limbs, which implies that when the brain is at fault in hysteria, the principal seat of trouble is in the right hemisphere. Canstatt and others had already pointed out that hyperæsthesia and spasm are more frequent in the right limbs, and anæsthesia and paralysis in the left limbs. It is known, also, that the pain under the breast exists oftener on the left than on the right side. Taking together the cases of unilateral paralysis in hysterical patients, mentioned by Macario, Briquet and De Fleury, besides the cases I have observed, I find that out of 121 cases, the left limbs were paralyzed in 97 cases and the right ones in 24 only. Two other very frequent differences exist in hysterical patients: there is a much greater frequency and a greater degree of tactile anæsthesia, with diminution of temperature due to spasm of blood-vessels, in the left than in the right limbs, particularly the hand.

2. Alterations of nutrition in paralyzed limbs are more frequent in cases of disease of the right than in cases of disease of the left brain. I have found that it is so for the so-called bed-sores and œdema. Out of 16 cases of bed-sores limited to one side, in the excellent paper of my friend, Prof. Charcot, proving that disease in one side of the brain produces sloughing in the opposite side of the body (*Archives de Physiol.*, Vol. i, 1868, p. 308), I find that the brain lesion was in the right side in 11 cases, and in the left in 5

cases only. I find that out of 19 cases of bed-sores mentioned by R. Bright, Andral, Abercrombie, and Lallemand, 13 existed when the lesion was in the right brain, and 6 when it existed in the left brain. Adding these facts to those of Charcot, we have 35 cases, in which 24 times the disease was in the right brain, while only 11 times it was in the left.

The alteration of nutrition in the ear of patients attacked with general palsy, is much more frequent in the left than in the right ear. (Petit, in *Journal de la Sect. de Medec. de la Loire Infer.*, Nos. 178–9. 1858, p. 299).

Optic neuritis, producing amaurosis, as my friend Dr. J. Hughlings Jackson has first ascertained, depends more often on disease of the right hemisphere than on disease of the left. (*Lond. Hosp. Rep.* 11, 1865, p. 316.)

Disease (hemorrhage, congestion, inflammation) of one or both lungs, due to disease in the encephalon, is more frequently found when the lesion is in the right than when it is in the left brain. Experiments on animals have shown this to me as well as clinical facts observed in man.

3. The convulsions of the muscles of the eye which constitute what Prof. Vulpian and Dr. Prevost have called the *conjugated deviation of the eyes* in organic brain affections, show that the right brain has much more power in producing that spasm than the left one. Adding a number of cases to those published by Dr. Prevost (*De la deviation conjuguee des yeux*, etc. Paris, 1868. *Passim*), I find that in 69 cases in which the convulsion was recorded by several authors or observed by myself, 47 times the lesion was in the right brain and 22 times only in the left.

I called attention long ago, in several lectures, to the greater frequency of general or unilateral convulsions in cases of lesions of the right brain than in those of the left. In very able papers of M. G. W. Callender (*St. Barthol.'s Hosp. Reports*, Vol. iii, 1867, p. 415, and Vol. v, 1869, p. 3, and *Med.-Chir. Transact.*, 1871, Vol. liv, p. 129,) I find that, without knowing my views, he has come to the same conclusions. As I will soon publish a paper on the subject of convulsions allied to or caused by diseases of the brain, I will only say here that, besides the general conclusion that diseases of the right hemisphere produce convulsions by far more frequently than diseases of the left one, I have ascertained the following interesting points: 1st, that diseases of the left brain, producing unilaterial convulsions, will very rarely indeed (in one out of ten cases) cause them in the same side; 2d, that diseases of the right brain, producing unilaterial convulsions, will, on the contrary, frequently cause them in the corresponding side (in more than one-third of the cases). So that taking together the cases of disease of the right or the left brain, unilateral convulsions have a greater tendency to occur in the right than in the left limbs.

4. We owe to Mr. Callender (*St. Barthol.'s Hosp. Rep.*, Vol. v, 1869, p. 24,) some remarks on the greater rapidity of death after apoplexy of the right hemisphere, as compared with that of the left. I have ascertained that his conclusion is borne out by the comparison of a great many more facts than those he has studied. I have also found that in softening of the brain by embolism, a similar result is obtained when we compare the right with the left brain. In 44 cases of embolism of the left cerebral arteries, the duration of life gives a total of 28,540 hours, which, divided by 44, gives an average duration of 648½ hours; while in 26 cases of embolism of the right cerebral arteries, the total being 13,110, the average duration has been 503⅘ hours.

Besides, I have made most careful experiments on a very large number of guinea-pigs, and obtained from injuries to one or the other of the hemispheres the following results: Out of 62 animals wounded in the right half of the head and brain, 14 only survived, *i. e.*, not one-fourth; while out of 34 with similar injuries to the left side, 19 survived, *i. e.*, more than one-half. To express myself perhaps in a more striking manner, death occurred after an injury to the right side in more than three-fourths of the animals, while it occurred in less than one-half of those whose left side was injured. I have unfortunately no exact record of the duration of life, but there is no doubt that this duration among the animals that died, was notably less for those operated on the right side than for the others. As much as possible the injuries were alike in the two sets of comparative experiments, and if there was a difference, it was that the right brain had been, perhaps, less injured than the left.

5. A very singular fact, pointed out long ago by Bayle and by Dechambre (*Bulletin Clinique*, Paris, 1835, p. 116), I have ascertained to be borne out by a great many cases of hemiplegia. It is, that when the unilateral paralysis is on the side of the lesion in the brain, it is almost always in the right hemisphere that this lesion is, or in other words, the right brain has much more power than the left to produce paralysis in the corresponding side of the body.

6. Another point of interest on this subject is, that the right brain is more capable than the left to produce also paralysis in the opposite side of the body. The frequency, the intensity and duration of hemiplegia are greater in the left limbs than in the right ones in cases of diseases of the opposite side of the encephalon.

7. A greater tendency to atrophy in cases of dementia exists for the right cerebral hemisphere than for the left, as shown by Baillarger, (*Annales Medico-Psychologiques*, 1858, Vol. iv, p. 168). Owing to that cause, left hemiplegia is more common than right side paralysis among the demented. The results obtained by

Baume (*Ann. Med. Psychol.*, 1862, p. 543), do not affect this conclusion (although they may seem to), because Baume has mixed up cases of hemorrhage and other morbid states with cases of atrophy.

I hardly need to say that all these facts, showing how different the symptomatology of the right brain is from that of the left brain, are absolutely irreconcilable with the old theories regarding the physiological and morbid actions and properties of the two sides of the brain. On the contrary, the views I hold are perfectly able to explain these facts. I will return to this subject in a special paper.

PROP. XII.—*In the same patient, with a persistent organic alteration of the brain, the symptoms may vary considerably from day to day.*—This variability is very often forcibly brought to the attention of medical men. Remarkable cases have been published by Casimir Broussais, Guislain, Abercrombie, Bright, Andral, and others. I will elsewhere give some of these cases. Such facts are usually explained by supposing that a congestion appears and disappears round the seat of the lesion. This supposition I will not deny *in toto*, as I admit the probability that such variable congestions have a good share in the causation of the symptoms. But can the old theories explain that a congestion (as was observed in a great many cases) seated in one limited part of the brain will produce alternately one set of symptoms and then another? Certainly not, while there is nothing contrary to the view I hold in the variability of symptoms from the same apparent cause. We know that a peripheric irritation may produce alternately various effects, and if we consider organic lesions of the brain as acting by a similar mechanism, it is quite natural that there be sometimes an alteration of effects.—*Archives of Scientific and Prac. Med.*

(TO BE CONCLUDED.)

On Chronic Poisoning with Chloral Hydrate. By DR. LUDWIG KIRN. (From the Allgem. Zeitsch. fur Psychiatrie.) Translated and condensed by the Editor of *The Practitioner*.

The immense literature of chloral hydrate, which represents, however, but a fraction of the cases actually observed, affords many references to acute poisoning, involving the greatest danger to life, or ending fatally in spite of remedies. Cases of the latter kind have appeared, especially in the English journals, with a truly fearful frequency.

Much fewer are the published observations on the changes

which the long-continued use of chloral hydrate produces in the organism. If some observers have failed to recognize any such changes even after long administration, it should be remembered that not only are the slighter disturbances liable to be overlooked, but especially that, from the experience of ourselves and others, the individual tolerance of patients for chloral varies within very wide limits.

We administered chloral hydrate, for the most part, once daily, as a hypnotic, in the dose of 30 to 60 grains, or occasionally 75 to 90 grains; with our present experience we should now rarely go beyond the dose of 30 grains. In particular cases we gave, besides the evening dose, one or two others in the day, to calm excitement. Our early experiments having warned us against the hypodermic use of chloral, it was afterwards always given by the mouth (or else by the rectum, with similar effects).

The calming and hypnotic action of the drug in cerebral and nervous disorders proved to be exceedingly variable; whilst with many the commencing dose of 30 grains continued for a long time to produce the desired effect, and in others only a quite gradual increase of this quantity was needed, in other patients there was but slight result, although the dose was quickly increased to 60; and in one case no sleep was obtained, although the amount was rapidly raised to 90 grains. In many patients, under apparently similar external conditions, the same quantity would sometimes succeed and sometimes fail. We shall here only concern ourselves with a series of morbid phenomena which appeared sooner or later in the course of a continuous employment of this hypnotic, collating these with the experiences of others.

The most prominent of the symptoms were those connected with the skin; their production for the most part depended on the cutaneous vaso-motor nerves. They were more or less extensive erythemas, and pustular or papular exanthemata.

The clinical observations of Schule* on chloral erythema must here take the first place. "The use of chloral produces a tendency to fluxionary hyperæmias, with increased and strengthened heart-action. This is first and most considerably manifested in the head, the vessels being dilated, and an intense erythema occurring, at first in spots, but afterwards more diffusely. In the more pronounced forms the erythema extends downwards to the trunk, and becomes general, in which case it seems to follow, by preference, the course of the larger nerve-trunks. This chloral-rash remains latent until it is set going by some stimulus to the vascular system, but then appears in an intensity and rapidity which are proportioned to the existing current of (general) chloralization."

* Ueber eine bemerkenswerthe Wirkung des Chloral-Hydrats. Allgem. Zeitsch. fur Psych. xxviii. 8.

I reproduce these results of Schule's verbally, because I can entirely confirm them. Although, from the varying chloral idiosyncrasies of individuals, they are not always observed, the statement is true for a great number of cases, and I have at this moment a series of patients under my eyes in whom the chloral-rash can be produced with the certainty of an experiment. For instance, in a paralyzed patient, who took 30 grains of chloral every night, ten minutes after she had drunk her beer, there occurred increased action of the heart and spots of roseola upon the forehead, nose, cheeks, and neck, which quickly coalesced into a patchy erythema, with swelling and heat of the affected parts, which symptoms disappeared in about an hour. Still more strongly appeared the same symptoms in a young and previously healthy woman, affected with mania, who every night took 30 to 45 grains of chloral (although she had not previously suffered from congestion of the face). As soon as she took a glass of beer there was strong pulsation of the arteries, and the whole face was swollen and of such an alarmingly deep color that we were obliged to forbid the use of wine and beer. At present we but rarely allow alcoholic drinks to patients who are being treated with chloral. In another young woman suffering from mania, who took 30 grains of chloral at night, four ounces of wine were sufficient to induce the chloral-rash.

Chloral erythema has also been studied from other sides; we may specially mention the observations of C. Browne, which led him independently to results similar to those of Schule. He too observed, as a consequence of chloral, a great tendency to congestions of the head and face, which in a few cases were limited to the cheeks, but in many extended to the forehead, neck and ears. He observed simultaneous excitement of the vascular system, strong contraction of the pupils, and ingestion of the conjunctiva. The symptoms also were at their height after the taking of quite moderate doses of alcohol; he attributed this to temporary paralysis of the vaso-motor centres in the head and neck. Browne also observed another case in which, after a dose of chloral (the amount of which is not stated), a diffuse inflammatory redness appeared over the whole body, so that it was thought advisable to isolate the patient; in ten hours this redness had disappeared. Husband gave to a patient daily for eight days, two 20-grain doses, and for five days more two 30-grain doses of chloral; a scarlatinal rash broke out over the whole body, accompanied by fever and tenderness of the skin, and was followed by desquamation.

The effect is not always limited to congestion and erythema of the skin, but other skin affections are occasionally produced; for instance, our female patients, who had taken 60 grains of chloral daily, first had erythema of the face, and later a papular

rash on the arms, with red bases. In some, nettle-rash occurred.

The swelling, accompanied or not by rash, which has been noticed in the face after continued use of chloral, may equally occur on extensive portions of the body. In several patients observed at Illenau, a swollen condition of almost the whole body was noticed, which might be ascribed to serous infiltration of the skin from stasis of blood.

With these affections of the skin must be associated affections of the mucous membranes, which, so far as they are not the result of direct chemical irritation, must be considered analogous to the former; *i. e.*, they are produced by paralysis of the vaso-motor centre. For instance, in some patients treated with chloral we observed redness, swelling, and secretion of the conjunctiva, which became severe if the medicine was continued, but speedily disappeared on its disuse. Other observers, especially Balfour and Brady, have noticed this conjunctivitis. In three of our patients, probably from the mechanical irritation of the medicine, there was moderate catarrhal sore-throat, with pain in the fauces. In one of Curschman's patients there was pronounced redness and swelling of the epiglottis and of the false vocal cords.

The evil effects of chloral are not always limited to vaso-motor paralyses and transitory neuroses of the skin and mucous membranes; if the conjestions are not removed, the after-consequences may be severe or even dangerous if the seat of the affection is in the vital organs. We may here refer to a case which resembles the former as regards the affection of the skin and mucous membrane, but which became serious in consequence of severe swelling of the glands (Chapman: *Lancet*, 1871). Reimer observed in a series of patients the following fact, especially after the use of morphia and chloral together: After slight external pressure there was congestion in circumscribed spots with much lowered sensibility, which quickly disappeared if the pressure was soon removed. Under less favorable circumstances, the red spots swelled and assumed a darker color; vesicles were soon developed, which might even run on to sloughing. This phenomenon is distinguished from the usual mark after long pressure in conditions of gradually sinking vitality, especially because, whilst the epidermis and cutis remain intact, it extends into the deep subcutaneous tissue.

An important symptom which we have noted in a series of cases of the long-continued use of chloral is an interference with respiration, which may remain slight, and scarcely troublesome to the patient, or may become positive dyspnœa. This symptom was experimentally produced by the Swede Ham-

mersten, who observed severe dyspnœa in cats that had taken chloral, and was briefly noticed by Jastrowitz, one of whose patients, while taking chloral, suffered from severe dyspnœa with occasional cessation of breathing; and it was finally completely described and explained by Schule, who observed a patient who, after long use of chloral, used regularly to suffer after meals from a sense of oppression which made going up stairs extremely difficult, and even interfered with speech, although there was no chest disease to account for this. The symptoms persistently recurred in spite of all treatment till the chloral was left off, when the oppression entirely disappeared.

A similar chloral dyspnœa, though not so long continued, occurred in many cases observed by us, either with or without a rash, and a feeling of heaviness and anxiety.

That the chloral dyspnœa does not always stop at the lower degrees, but may proceed to the most severe and dangerous developments, is shown by the following observation communicated to me by an eminent physician. This gentleman was summoned in consultation to a lady prostrated by long sufferings, who had of late suffered from attacks of extreme dyspnœa, which had increased to asphyxia; at the same time the face was swollen, the facial muscles paralyzed, and there were also all the signs of cerebral effusion. Every remedy had failed, and the patient seemed on the brink of the grave. The physician therefore recommended the discontinuance of a daily dose of 45 grains of chloral which had been given as a hypnotic; whereupon all these highly alarming symptoms vanished in an almost magical way, the cerebral disturbance ceased, and the respiration quickly resumed its normal type!

The dyspnœa may be anatomically explained, by analogy with the effects of chloral upon the skin and mucous membrane, by hyperæmia of the lungs which is produced through the channel of the vaso-motor nerves. We find here a further confirmation of the assumption that chloral operates upon the vaso-motor centre and the medulla oblongata, and that its paralyzing influence extends thence to the peripheral branches of the affected nerves. This might also lead to a practical contra-indication of chloral in all morbid conditions where there is a tendency to congestions or stases of blood in the lungs.

We come now to a fourth group of cases in which both the quality of the symptoms and their greater or less extension in the organism indicate a distinct change in the composition of the blood. In this connection the following cases observed by Crichton Browne may first be referred to; their interesting phenomena justify a detailed report:—

Case I.—A woman, aged 69, suffering from periodical mania, had 20 grains of chloral thrice daily; on the fourth day a red-

ness was developed on the skin of the chest and shoulders, which did not vanish on pressure; on the sixth day the eruption had extended over the whole trunk and limbs, livid spots and deep red patches alternating. The lips and the mucous membrane of the mouth were excoriated, the gums spongy, the tongue blistered and ulcerated, the breath fœtid. The general state was one of great depression; pulse 120. On the eleventh day the ulceration of the mouth had extended further; the lips were covered with crusts. The petechial eruption was diminished on the chest and abdomen, the spots were yellowish, with patches of white skin between them; the spots on the arm lost their redness later. On the fifteenth day there was a sort of general desquamation; fissures of the skin over the sacrum, and in the neighborhood of the joints. From that time convalescence proceeded, and ordinary health was restored.

Case II.—A woman, aged 46, suffering from cardiac disease, hemiplegia, and dementia, took 15 grains of chloral three times a day, with a calming effect. On the nineteenth day of the treatment numerous purple-red spots appeared in the neighborhood of the left elbow; on the next day many similar spots were seen on the shoulders and fore-arms, which coalesced with the others. On the twenty-first day livid spots came on the face; the left arm swelled and became hard; on its reddened surface appeared a multitude of minute points of a much deeper color, which did not diminish on pressure. Next day there were dark purple spots and discolorations, some small, round, and circumscribed, others broad and irregularly shaped, on the legs and abdomen, and in stripes on either side of the vertebral column. Simultaneously with the petechiæ there were great prostration, tendency to somnolence, weakness and excitability of the pulse, sore lips, thickly coated tongue. On the twenty-third day the spots and discolored patches had extended in every direction, and the previously bright red spots had assumed a deep purple color. Finally, signs of lung congestion appeared, with gradual failure of power, and death, after several fainting-fits, on the twenty-sixth day. At the autopsy numerous ecchymoses of every shape and size were observed more or less on all parts of the skin; the right lung was congested and œdematous, the heart dilated and its valves thickened; over the right central hemisphere there was a large arachnoid cyst containing fluid blood.

With the foregoing may be joined a case related by Monkton, in which, after four days' administration of 60 grains of chloral daily, a rash resembling slight variola with hæmorrhagic purpura appeared, and death occurred on the sixth day, by syncope. Finally may be mentioned two patients of Pelman, in whom, after treatment with chloral, there were larger and smaller petechiæ over the whole skin: in one, which proved fatal,

numerous petechiæ were found on the mucous membrane of the larynx and under the endocardium; and a hæmatoma on the right side in the skull reaching to the base, the fluid contents of which gave evidence of their recent origin.

I shall now relate a case observed by myself, which is yet more striking from the multiplicity of its phenomena, which are of a kind perhaps to give us some clearer understanding of their origin. The case was observed by me at a time when the evil effects of chloral hydrate were not yet known; the medicine was therefore continued in spite of the most multiplied symptoms, because chloral was not for a long time recognized as their cause: the affection was therefore followed up further than we should dare to do now that our increased knowledge would oblige us to stop at an earlier stage. [Here follows a detailed report of the case, which need not be given.] If we sum up the weightier symptoms of this case, we find a young, strong, previously healthy person suffering from uncomplicated mania, in whom, on the ninth day of chloral treatment, a rash appeared in the form of groups of red spots, which soon became confluent. On the twentieth day the temperature and pulse rapidly rose to a febrile pitch; three days later the temperature had reached 106.7°; large and repeated doses of quinine were given without result, and baths had only a temporary effect. Œdematous swelling of the face, cheeks, eyelids, and ears now set in. During the whole course of the disease, the skin, so far from returning to its natural appearance, was the seat now of impetiginous, now of moist, and now of scaly eczema and ichthyoses, so that the process of desquamation, instead of being short as in the acute exanthemata, occupied many weeks, during which great sheaths of epidermis were cast off from all parts of the body. The profound lesions of the skin nutrition were evidenced in the later stages by a remarkable shedding of the hair and a gradual falling off of all the nails of the hands and feet. The affection of the skin was accompanied by a similar one of the mucous membranes, first of the intestines, which kept up watery diarrhœa in spite of medicines, and then by a similar affection of the conjunctiva and the bronchi. From the sixth week of the disease onwards a series of large abscesses formed on both arms over the shoulders and arm-pits, which secreted a considerable quantity of pus. Whilst these phenomena were occurring, there had been for eight weeks a continuous fever, occasionally remitting, and then again running up to a temperature beyond 104°.

The symptoms which we have now collectively described must be defined as chronic blood-poisoning. We cannot, however, place this in any of the known groups; we have not to do with a pyæmia or septicæmia, nor with a metallic or vegetable poisoning, since none of the causes have been at work which would

lead to these affections, nor do we observe their characteristic phenomena; still less did the affection which the medicine produced in this patient resemble puerperal mania. In fact, there was no other external cause except the administration of the chloral: this medicine, which in even much larger single doses produces no such effect, was for ten weeks given in nightly doses of 45 to 60 or even 75 grains, sometimes in two doses daily. The symptoms began, after a certain saturation had been produced by accumulation, to spread further and further, and finally to assume the complete picture of a chronic blood-poisoning.

The origin of the disease leads us thus, by exclusion, to conclusions which have a high degree of probability, and we are also in a position to adduce positive facts. If a glance be cast at the symptoms observed by ourselves and others, after a more or less continued administration of chloral, we meet with the greater part of the phenomena observed in our last case, especially the very various affections of the skin and mucous membranes, the alterations in vascular action, and finally the profound alterations of the blood, which in some cases remind us of the phenomena of scurvy. The characteristic feature in the morbid picture which we have given consists less in symptoms which in themselves are altogether new, than in the assemblage of the most heterogeneous phenomena, which previously had only been observed singly, in one person and in a most aggravated degree of intensity.—*The Practitioner.*

Summary of Observations upon the Effect of the Galvanic Current upon the Auditory Nerve. By Clarence J. Blake, Boston.

Since the publication of the experiments of Brenner, and the interest excited by his observations on the reaction of the auditory nerve, under the influence of the galvanic current, the application of electricity to the diagnosis and treatment of affections of the ear has become much more general, and not only so far as concerns the condition of the auditory nerve, but also in the treatment of diseases of the middle ear, as is evidenced in recent German and English publications.

In his Beleuchtungsbilder des Trommelfells, Prof. Politzer says: "With the advance which is daily being made in the diagnosis and treatment of diseases of the ear, the domain of nervous deafness is being rapidly encroached upon and diminished." To any one who has followed the progress of aural surgery during the past ten years, this remark is plainly true, but there still remains a class of aural affections of the nature of which the speculum and otoscope

give us but little information, and for which the ordinary surgical measures afford but slight relief. To this class belong, not only those cases of deafness where the middle ear shows no symptom whatever of disease, but also those in which a disease of the tympanum may be accompanied by, or may mask an affection of the labyrinth, or of the auditory nerve; and it is in these cases that we have to seek some more subtle means of diagnosis and of treatment.

The conditions under which the galvanic current may be employed by the aurist with advantage, as a means of assistance in diagnosis, may be superficially classified as those of—

Chronic catarrhal inflammation of the middle ear of long standing, with considerable deafness and diminution or absence of the perception of sound conveyed through the bones of the head.

Chronic catarrhal inflammation of the middle ear of shorter duration, accompanied by tinnitus aurium and diminution of hearing.

Cases of deafness occurring during pregnancy, in child-bed, at puberty, or referred to mental disturbance, mental or bodily exhaustion, or accident, as the cause, in which the middle ear shows no signs of disease whatever, or not sufficient to account for the degree of deafness which may pertain in such cases.

Deaf-mutism, congenital or acquired.

The principle laid down by Prof. Brenner, to whom is due the credit of establishing a formula of reaction of the auditory nerve, under the action of the galvanic current, is, that "the auditory nerve in health reacts to the galvanic current in a regular manner by distinct sounds at and during the closure of the negative, and at the opening of the positive pole; that these sounds may be whistling, ringing, hissing, singing, humming, and rumbling; that they vary in different individuals, and are modified by the strength and duration of the current; that the most frequent is whistling, which is clear, agreeable and musical, and that any departure from these reactions indicates disease."

The statements of Brenner were at first denied by some observers, but were also and more recently largely confirmed by others, so that the formula established by him may be taken, not as a matter of conjecture, but as a positive contribution to our knowledge of the condition of the auditory nerve. A means is thus given of answering the question in any given case, as to whether the auditory nerve is or is not in a normal condition, and with this a point of decided value both as concerns prognosis and treatment. On the other hand, however, it is not always possible to establish a formula of reaction of the auditory nerve; indeed in many cases no formula whatever can be obtained, although the necessary conditions, with regard to a successful application of the current, are fulfilled. In such cases, the practical value of the discovery of Brenner is much diminished, and it becomes neces-

sary to seek some other demonstration of the effect which the galvanic current may have upon the auditory nerve, and this may be accomplished by testing the effect which the current has upon its perceptive power.

The cathode being applied in front of the ear to be tested, and the anode held in the hand of the opposite side, and the current gradually increased, I have found the perception for high musical tones to increase from three to five thousand vibrations in the second above the highest limit of hearing before the application of the current. This increase in perception continued during the passage of the current, and for a short time after the opening of the cathode, but was speedily diminished by a reversal of the current and application of the anode. Ritter has observed, that on passing a direct continuous current through his own ears, the sound of a tuning fork, G, gradually increases in pitch with the increase in intensity of the current.

The cathode being applied in front of the ear, as in the previous experiment, we find that the passage of the galvanic current increases not only the limit of perception of musical tones, but also the intensity of perception, the degree of increase in intensity of perception being a measure of the degree in which the auditory nerve responds to the stimulus.

In establishing this observation, experiments were first made in cases of normal hearing, and later in those of diminished hearing, resulting from disease of the middle ear, or without visible cause. In all cases a current from a Stoehrer battery without the rheostate was employed, and the electrodes applied, the cathode in front of the tragus, and the anode to the hand of the opposite side. A tuning fork set in vibration by means of a spring hammer giving a stroke of uniform intensity, was first held opposite the ear to be tested, and the length of time during which the tone was heard noted; the same test was repeated under the stimulus of the galvanic current, and the increase in the duration of the perception also noted. In the healthy ear the increase is from one-twelfth to one-sixth of the normal duration of perception, on the average, and this proportion diminishes in accordance with the diminished reactive power of the auditory nerve.

As an illustration of this manner of employing the continued current, cases of chronic catarrhal inflammation of the middle ear, forming about 27 per cent. of all aural affections occurring in this climate, may be instanced. In the ordinary course of the disease there occurs first a diminution of patency of the Eustachian tube, rarefaction of the air contained within the middle ear, and pressure of the membrana tympani inwards, the thickening of the mucous membrane lining the tympanum, and forming the inner coat of the membrana tympani, tending to retain the latter structure in its abnormal position, thus producing an abnormal degree of

intra-labyrinthine pressure, and preventing also the proper transmission of sonorous vibrations from without inwards to the labyrinth. As this condition continues and increases, there is gradual increasing diminution of hearing on account of the changes in the middle ear, and secondarily, a diminution of perceptive power of the auditory nerve, as shown by tests with the watch and tuning-fork, pressed upon the temple and held between the teeth. The use of the galvanic current in such cases, will serve to determine the degree to which the auditory nerve has become affected, and also the power of perception under stimulation remaining to it, the result materially influencing not only the prognosis but the treatment.

In those cases of chronic catarrhal inflammation of the middle ear in which the perceptive power is but slightly diminished, and where tinnitus aurium is a prominent symptom, the result of the use of the galvanic current is even more satisfactory. As a result of the progressive changes within the middle ear, there is, with the pressure of the membrana tympani and ossicula inward, evidence of the effect of this pressure and the accompanying irritation in the auditory nerve in the occurrence of subjective noises, noticed at first occasionally, and finally becoming constant, and increasing with the progress of the disease in the middle ear. In many of these cases it will be impossible to obtain a positive reaction according to the formula of Brenner, but we may be guided in the application of the current by the tests described, and in addition by the effect which the current has upon the tinnitus aurium. Its first application will of course be purely experimental.

The hearing having been carefully tested with regard to the hearing distance by a test watch, the perception of high musical tones by means of Konig's rods, and the duration of perception of the tuning fork, and the patient's attention drawn to the degree of the tinnitus aurium, the cathode may be first applied in front of the ear, and then the anode of equal strength and for the same length of time, the hearing being again carefully tested, during and after the passage of either current.

It will be found as a rule that the current which diminishes the tinnitus aurium increases the hearing, and that the current which increases the tinnitus diminishes the hearing. In cases where the tinnitus is diminished without increase of the hearing, this effect is usually produced by the use of the anode, the cathode increasing the tinnitus, without a corresponding increase of hearing. When the hearing is increased, together with an increase of the tinnitus, this result is usually obtained with the use of the cathode.

In the use of the galvanic current in the treatment of these cases, we should be guided by the result of the experimental application; the current to be employed being the one which increases the hearing and diminishes the tinnitus, or, in default of this double

effect, the current which increases the hearing, even at the expense of increasing the tinnitus, experience showing that the tinnitus, though temporarily increased, gradually subsides and diminishes with the improvement of hearing at subsequent applications of electricity. The following case is an illustration of the latter observation: The patient was a man in robust health, twenty-one years of age; the hearing had been gradually but noticeably decreasing for more than three years, and during that time there had been a constant rushing sound in both ears; this sound did not vary materially with change of climate, weather, or condition. The membrana tympani of both ears was concave, opaque and of a dull gray color. The use of the air douche and catheter did not improve the hearing, which was $\frac{4}{1}\frac{1}{2}$ in the right ear and $\frac{3}{1}\frac{1}{2}$ in the left ear, as tested by the watch. The perception through the bones of the head, for the watch, was better in the left ear, and for the tuning-fork, better in the right ear, but diminished in both. The current from a Stoehrer battery was applied, without obtaining formula of reaction; the use of the anode neither diminished the tinnitus aurium nor improved the hearing; the use of the cathode increased the tinnitus aurium, and also improved the hearing. The use of the cathode was therefore continued at intervals of two days, and after the third application, the hearing tested by the watch had increased to $\frac{4}{1}\frac{1}{2}$ in the right ear and $\frac{3}{1}\frac{1}{2}$ in the left ear, accompanied by a sensible diminution of the tinnitus aurium. In the following case also no positive formula of reaction could be obtained: A woman, thirty-five years of age, who had never been robust, and who had performed much mental labor, and who was five months pregnant at the time of treatment, had, in addition to the diminution of hearing consequent on a slight catarrhal inflammation of the middle ear, a continuous rushing sound in both ears, varied occasionally by rhythmical beating and a loud ringing. The use of the cathode increased the tinnitus, but did not increase the hearing; the use of the anode, however, increased the hearing and diminished the tinnitus aurium, which did not increase to its former degree until three or four days had elapsed. By repeated use of the anode, during a period of six weeks, the tinnitus disappeared entirely and the hearing materially improved. In the case of a woman fifty years of age, the hearing having gradually diminished during a period of five years, and more especially since a severe mental shock, until it was but $\frac{2}{1}\frac{1}{2}$ in the right ear, and $\frac{2}{1}\frac{1}{2}$ in the left ear, the galvanic current gave the normal formula of Brenner. It was found, however, that the use of the cathode increased the hearing distance, and also the perception for musical tones, and diminished the tinnitus aurium, which had been constant and annoying. After the fifth application of the cathode, the hearing had increased to $\frac{6}{1}\frac{1}{2}$ in the right ear, and $\frac{7}{1}\frac{1}{2}$ in the left ear. In this case the membrana tympani was trans-

parent, and normal in position, the Eustachian tubes perfectly free, and the hearing was not increased by the use of the air douche.

As an instance of the action of a stimulant current upon the auditory nerve in a patient, in whom the hearing was not materially improved, the following case may be mentioned :—

A man thirty-two years of age, first noticed diminution of hearing and a rushing sound in both ears, ten years before the date of his application for treatment. His general health had been good, with exception of occasional attacks of malarial fever, for relief from which he had used quinine in large quantity. The hearing had so far diminished, that the watch was not heard when pressed upon the auricle, and the tuning-fork held between the teeth, was heard only in the left ear. In the right ear, however, a tone of 50,000 v. s. was distinctly heard, and in the left ear a tone of 45,000 v. s. The membrana tympani of both ears was transparent and apparently normal, except that it was quite concave. The hearing was not improved by the use of either Politzer's air douche, or the catheter. No formula of reaction could be obtained, but the use of the cathode increased the perception for high musical tones to 60,000 v. s., and for duration of hearing of the tuning-fork, from twenty seconds to thirty-five seconds.*

This increase in the perception for musical tones persisted but a short time after the application of the current, the duration of perception of the tuning-fork, however, continued to increase, but never reached the normal standard, and the improvement in the general hearing was, on the whole, so very slight, that the use of the current was finally abandoned. This case presented several points of interest. So far as could be determined, the middle ear was in a healthy condition, with exception of such changes as were evidenced by the concavity of the membrana tympani. Assuming the auditory nerve to be in a normal state, we should expect an increase in the limit of perception for high musical tones, as was the case, on account of the increased tension of the membrana tympani; the same condition would tend to diminish the hearing for lower tones, as was the case in the test with the tuning-fork, and in the hearing for the voice. The use of the cathode increased the hearing for the voice, and for the watch slightly, and decidedly increased the perception for high musical tones, and also the duration of the perception of the tuning-fork; and an excision of a portion of the membrana tympani, which operation was subsequently performed, had no appreciable effect upon the hearing whatever.†

* The tuning-fork, A 562 v. s., being struck by the spring-hammer with a force equivalent to one pound falling one inch, the normal duration of hearing is from 55 to 60 seconds.

† In the majority of cases in which this latter operation is performed, the perception for high musical tones is immediately increased; in one case in which

For practical purposes, in the ordinary routine of aural practice, the galvanic current may be employed in the simplest manner, without the intervention of the rheostate, and by applying one electrode in front of the ear and the other to the hand of the opposite side; at least my own experience has led me to content myself with this method of application.

In many of the cases belonging to the classes cited, in which it might be deemed advisable to employ the galvanic current as a means of diagnosis, it may prove impossible to obtain any of the definite formulæ of Brenner. It is in such cases that the tests and reactions above described may be of service.—*Archives Scientific and Prac. Med.*

ARTICLE V.—*A Case of Rheumatic Carditis, Suddenly Fatal.* By H. A. JOHNSON, M.D. and Prof., Chicago, Ill.*

I saw Mrs. S., æt. 31, first on January 9th, 1873, early in the afternoon. I found her suffering from ill-defined muscular soreness, especially over the abdomen and in the back—bowels not disturbed—skin moist—pulse slightly accelerated—tongue moist and white. I prescribed the following:

R. Potass. Bromid, - - - - - dr. iij.
Aq. Camph., - - - - - f oz. iv.
M. ft. sol. Sig. One tablespoonful every three hours.

Jan. 10. Saw her in the afternoon. She passed a restless night. Some nausea this morning, which she attributes to the medicine; supposed that she had taken morphine or opium. Pain more decidedly rheumatic — hips and knees sore — motion difficult. Menses came on during the night or this morning, several days earlier than expected. Begs for something to allay pain, which was now almost unbearable. I directed the following:

R. Hydr. Sub Mur., - - - - - gr. jv (4)
Morph. Sulph., - - - - - - gr. j.
Sodæ Bi Carb., - - - - - scr. j.
M. Ph. pulv. No. vj. (6).
S. One every three hours.

the experiment was made the patient heard a tone of 100,000 v. s. distinctly, after the operation, the extreme limit before the operation having been only a tone of 35,000 v. s.

* Received too late for insertion in its proper place.

Jan. 11, P. M. Pain still continues in hips and knees. She attributes a part of it to the advent of the menses. Condition of the stomach improved. Has rested and slept some under the influence of the powders of morphine, sub muriate and soda, but has not taken them as often as directed. I ordered them to be continued as often as necessary to relieve pain.

Jan. 12. Bowels have moved—probably from the effect of the powders, though not all of the four (4) grs. of calomel has yet been taken. Pains more general—complains of shoulders. Skin moist —tongue coated, white, moist—urine sufficient in quantity, and normal in quality—pulse 96, or a little below 100, per minute. Made no change in the treatment.

Jan. 13. The condition about the same. Rheumatic difficulty more decidedly migratory. The powders of calomel, morphia and soda, prescribed on the 10th, have been renewed—without my direction, however. Does not take much food. Has all the time been worse during the night than during the day. No change in treatment.

Jan. 14. I had been quite sick for two or three days, and on the 14th was unable to leave my bed. I heard nothing from the case till the morning of the 15th, when I learned from Dr. F. H. Davis and Dr. Lester Curtis that they had both seen her on the evening of the 14th. Dr. Curtis made the following prescription:

R. Potass. Bromid, - - - - - dr. ij. ss.
Aqua, - - - - - } *aa* f oz. j.
Syr. Cort. Aurant., - - - }

M. S. One teaspoonful every hour as directed.

I am told that she took one dose of the mixture prescribed by Dr. Curtis, after which Dr. Davis was sent for. He ordered the following:

R. Potass. Bromid, - - - - - dr. iv.
Cryst. Carbolic Acid, - - - - gr. vj.
Glycerine, - - - - - - f oz. ss.
Aqua, - - - - - - f oz. iij. ss.

M. One teaspoonful every three hours.

This was continued during the night, and till I saw her on the 15th. The powders were continued as they were judged necessary to allay pain.

I saw her about 2 P. M. They said that Dr. Davis' medicine had given her great relief. Some muscular tenderness yet over the chest and in the shoulders—pulse about 100, regular, and moderately full. Directed the continuance of the bromide of potass. and carbolic acid solution. Saw her again in the evening.

Jan. 16. Less positive pain, but had a restless night—only "snatches of sleep," as she expresses it. Has not taken the powders since yesterday. Directed the following:

℞ Tr. Opii Camph., - - - - - f oz. j.

S. Half teaspoonful every two hours, if awake.

Continue the bromide and carbolic acid solution. She only took one dose of the paregoric.

In the evening she begged for something to relieve the pain, which had become much more decided, especially in the limbs and joints—could hardly move in bed. I gave her a hypodermic injection of morph. $\frac{1}{4}$ gr. and atropin $\frac{1}{60}$ gr. She went to sleep in about five minutes, and slept quietly till three or four o'clock in the morning, after which she was restless—slept between seven and eight hours.

Jan. 17. Found her in the morning absolutely helpless—arms, hands, fingers, hips, knees, ankles and toes even, tender, and most of the joints somewhat swollen—skin hot, but still moist—tongue moist—urine scanty—pulse over 100, hard, small but regular—heart sounds normal in quality. Directed the following:

℞ Tr. Colchici, - - - - - f dr. j.
Potass. Bi Carb., - - - - dr. ij.
Potass. Cit., - - - - - dr. iij.
Aq. Camph., - - - - - f oz. ij.
Syr. Limon., - - - - - f oz. iv.

M. ft. sol. Take one tablespoonful every two hours.

This prescription was continued during the day. She was a little flighty when left alone, but recovered perfectly when spoken to, and answered intelligently questions addressed to her. In the evening, about the same. Has not slept during the day—in fact, not much since 3 or 4 A. M. Gave again a hypodermic injection of morph. $\frac{1}{3}$ gr. and atropin $\frac{1}{75}$ gr.

January 18, morning. Limbs less painful and tender, can move them a little—pulse about 95—skin moist, and cooler than last

night—slept between six and seven hours under the influence of the injection of morphine and atropine. I directed the colchicum mixture to be continued.

P. M. Bowels have moved freely during the day, copious watery discharges—limbs better, can use them quite well—complains of pain most in right shoulder—is very weary and wants sleep. Discontinued colchicum mixture, and gave, between 3 and 4 P. M., a hypodermic injection of morph. $\frac{1}{3}$ gr. and atropin $\frac{1}{75}$ gr.

January 19, morning. Found her free from pain in joints—had slept several hours during the night, but was still restless, anxious—talking a little incoherently, but answering intelligently when spoken to—pulse about 100—urine scanty—micturition difficult and painful. Directed the following:

R. Potass. Acet., - - - - - dr. iij.
Potass. Bromid, - - - - - dr. ij.
Spts. Nit. Dulc., - - - - - f oz. j.
Syr. Limon., - - - - - f oz. v.

M. ft. sol.

Take one tablespoonful every two hours till relieved.

P. M. Has passed urine freely and without pain—skin quite moist, but hot—pulse more frequent, 115 per minute, regular. Suspected cardiac trouble—found heart sounds normal in quality—no articular pain except in right shoulder, and this not severe. Discontinued diuretic, and ordered the following:

R. Sat. Tr. Rad. Aconite, - - - - f dr. j.
Morph. Sulph., - - - - - gr. ij.
Syr. Simp., - - - - - f oz. ij.

M. ft. sol.

Take one teaspoonful every two hours.

Saw her three times during this day. She slept during the afternoon and evening only a few minutes at a time, and then would start up suddenly, saying something irrelevant, but upon being spoken to, becoming perfectly conscious.

January 20, morning. Pulse 90, soft, moderately full, regular in rhythm. Mr. S. says that after my visit last night the pulse went up to 120 per minute. Skin moist, not so hot as during the day of the 19th—urine free in quantity—tongue moist—little or no pain anywhere—stomach tolerates milk.

6 P. M. Pulse 84, regular, soft, moderately full—skin moist and cool, but not cold, apparently normal in its qualities—has had no pain during the day—during the last twenty hours has had no continuous quiet sleep. Has been taking during the day half teaspoonful doses of the aconite and morphine mixture. For the purpose of procuring sleep, I directed the following:

R. Chloral Hydrate, - - - - dr. j.
Syr. Simp., - - - - - f oz. ij.
Glycerine, - - - - - f oz. j.
Chloroform, - - - - - f dr. ss.

M. ft. sol.
S. Dose, one tablespoonful.

Of this mixture, one tablespoonful was ordered to be given every hour till she slept. She took but one dose, and soon afterwards became wildly delirious.

At 10 P. M., or about that time, I saw her again. The pulse was then 104 and somewhat irregular, small, weak—breathing oppressive, panting—vomited fluid matters, apparently milk and mucus, immediately after I came in—bowels also moved, did not see the stool—she was helped out of bed—did not seem to have any pain. In answer to questions, complained only of nausea and oppression at epigastrium. She had been now twenty-four hours without continuous sleep, and I gave, for the purpose of producing it, a hypodermic injection of morphine, gr. $\frac{1}{3}$, and atropin, gr. $\frac{1}{75}$. She went to sleep in about eight minutes—the pulse became more regular at 102 per minute—breathing easier, but not free and full—the temperature of the skin seemed to be normal, and was neither dry nor excessively moist.

At 3 A. M. of the 21st, I was sent for, and upon arriving I found her dead. Mr. S. said that she had slept continuously from the time I left—that between 2 and 3 A. M. they turned her in bed, and that she suddenly ceased to breathe. She had nourishment as the stomach would tolerate it. During the last day or two milk was grateful, and she took as much of it as she liked.

Throughout her sickness, she was worse at night.

No. 4 Sixteenth St., *Feb.* 1, 1873.

Editors' Book Table.

[NOTE. — All works reviewed in the columns of the CHICAGO MEDICAL JOURNAL may be found in the extensive stock of W. B. KEEN, COOKE & CO., whose catalogue of Medical Books will be sent to any address upon request.]

BOOKS RECEIVED.

A Guide to Urinary Analysis, for the use of Physicians and Students. By HENRY G. PIFFARD, Physician to the Charity Hospital — to the New York Dispensary for Diseases of the Skin, etc., etc. William Wood & Co. 1873.

An excellent monograph, comprehending in less than a hundred pages what is most essential for the busy practitioner to know upon this much neglected subject. This book is an effort in the right direction, *i. e.*, to condense medical literature and simplify scientific proceedings. The subject-matter of the work appears to be fully up to the times, and the style and language far ahead of them. Appended is an index of the recent bibliography of urinary analysis which must prove a great assistance to students and writers in the prosecution of their investigations. The custom of appending to scientific works a bibliographical index is one which should be adopted universally. We hope to see the example set by the few followed by all. W. H.

Manual of Thermometry, for Mothers, Nurses, Hospitalers, etc., and all who have charge of the Sick and of the Young. By EDWARD SEGUIN, M.D. New York. Geo. P. Putnam & Sons. 1873.

This little volume is a condensed summary of the principles which underlie the relations of temperature to disease, derived in part from the author's own experience, and in part from the writings of Wunderlich, whose "Manual of Medical Thermometry" was translated by this author in 1871. The work is destined to prove valuable not only for what it actually contains, but also for many suggestions which will serve as initial points for more extended researches. The matter is good (we wish we could say as much for the manner of its presentation), the style is obscure, the language stilted and pedantic. The intermingling of sound medical science with doubtful theology is, to say the least, in very bad

taste; more especially as, in his denunciation of what he terms "theurgic medicine," the author betrays the source from which his own theological (?) instructions have been derived—the Commune. *Ne sutor ultra crepidam.* W. H.

An Introduction to the Study of Clinical Medicine, etc., etc. By Octavius Sturges, M.D., Cantab., etc., etc.

The author of this "Introduction" has endeavored to teach the student, not so much what to observe, which he is supposed to learn from systematic text-books, but how to observe it, and has succeeded well in his endeavor. The work will assist the careful student in formulating his knowledge acquired empirically, and will amply repay a thoughtful perusal of its pages. If the reader learns nothing new therefrom, he will at least be taught the practical and useful application of much that he already knows, but had hitherto failed to utilize from lack of knowing how.

W. H.

Chemistry: General, Medical, and Pharmaceutical, etc.; a Manual, etc. By John Attfield, Ph.D., F.C.S., etc. 5th Ed. Henry C. Lea, Philadelphia. 1873.

One of the most useful and valuable hand-books within reach of the American medical student. An objection justly made to many of our text-books, and especially applicable to those of which chemistry is the subject, is their assumption of the possession of a greater amount of knowledge by the student than he can, in the majority of cases, legitimately claim. The evil consequences of this are apparent in the superficial character of the knowledge of chemistry acquired by most medical men. As a rule, the student comes to the study of his profession profoundly ignorant of the elements of the sciences which he is expected to study; unless, therefore, these sciences be presented to him, at first, in their simplest forms of expression, he will inevitably become discouraged, and instead of a savan, become a sciolist. To those who desire to understand chemistry, we cordially recommend Mr. Attfield's book, and would comprehend in this class, not only medical men, but all those who desire to gain an insight, from a scientific standpoint, into what is popularly termed "the chemistry of every day life." W. H.

On the Treatment of Diseases of the Skin: with an Analysis of Eleven Thousand Consecutive Cases. By Dr. McCall Anderson, Professor of Practice, etc., etc. Philadelphia: Henry C. Lea. 1873.

Dr. Anderson's analysis is valuable inasmuch as it is essentially practical, and especially so, that the author has evidently aimed to simplify the treatment of this troublesome class of maladies, paying much more regard to the substantial conditions of the case than to minute specification. His classification of skin diseases presents some new features well worth the attention of practitioners. The appearance of this work indicates progress in the right direction, *i. e.*, of simplicity rather than complexity in the study of disease. W. H.

The Mechanism of the Ossicles of the Ear and Membrana Tympani. By H. Helmholtz, Professor of Physiology in the University of Berlin. Translated from the German, with the author's permission, by Albert H. Buck, and Normand Smith, of New York. William Wood & Co., New York. 1873.

Helmholtz' name has become one of the watchwords of scientific progress in the present decade. The volume whose title is given above, is another addition to the many valuable contributions to science of this great German physicist and physiologist, whose labors have always been directed to the harmonizing of natural laws—the unification of science.

The present era in medical history, more than any preceding, is marked by the appearance of scientific monographs, evidences of the impetus which special studies have received, in obedience to the demands of the spirit of the age for greater scientific accuracy, and points of departure for new and more minute investigations. The student accepts eagerly and studies earnestly the little monograph which promises, at the cost of a few shillings in money, and an hour or two of study, to acquaint him with the facts and principles which he seeks to know, while he turns away in despair from the ponderous octavo in which the grain of wheat is to be reached by the purchase and sifting of the bushel of chaff. W. H.

Editorial.

Πρὸς ἡῶ τε καὶ ἡλίου ἀνατολῶς ἐποιέετο τὴν οδόν.—Herod. vii. 58.

Head of the Firm gone East!

We wonder if old Herodotus ever thought how aptly the above quotation would serve as a sign-board over the doors of most of the firms in this, then *terra incognita*, three thousand years after the hand which wrote it had mouldered into dust. The very aptness of the language goes to show that there is "nothing new under the sun;" that even in the days of Herodotus they "went East!" In compliance with the time-honored custom, and in obedience to the necessities of the case, the JOURNAL hangs out the "notice" over its own door. The July No. went to the devil (printers) before we were able to chronicle our loss, and to explain to our readers the cause of what we fear was but too apparent to their enlightened perceptions, *i. e.*, the absence of its usual amount of *vis vitæ*. Our venerable Senior has departed this life, for a better, we trust, in Europe. His departure at the early dawn was not exactly in the nature of a flight, but rather a masterly retreat, in which much strategic skill was displayed to elude the pursuit of hosts of patients, eager to outflank him.

If our readers will exercise the virtues of forbearance and charity, they will surely be rewarded therefor. They have not been forgotten in this hasty exodus of the Senior Editor, a portion of whose mission to London and Paris, is to secure correspondents for the JOURNAL, that its readers may receive early advices, from first hands, of advances and improvements in medical science and practice. W. H.

We were recently honored with an invitation to attend the Semi-Annual Meeting of the Dubuque County Medical Society, at Dubuque, Iowa. This Society is one of the oldest in the Northwest, having attained its full legal majority of twenty-one years; its membership comprises some of the first physicians of the State of Iowa. The proceedings of the meeting were conducted with much dignity and efficiency, by Dr. Jas. C. Lay, Pres., and Dr. Luck, Sec., and comprised very interesting reports of cases, by Drs. Staples, Watson, McCluer, Smith, Missling, Luck and others. The

discussion of these gave abundant evidence to show that the best in our profession are not all in the large cities, and that our professional brethren of "the beautiful land" are keeping step to the progress of the times, and in the front rank too. The report of the Board of Censors, by Dr. Asa Horr, Chairman, rejecting two applications for membership, on the ground of professional incompetency and questionable conduct, was dignified in its tone, and temperate in language, but very firm and decided in its expression. We were entirely satisfied that scientific progress and professional ethics are perfectly safe in the hands of our neighbors "on the other side of the river." This Society sustains, and to the best of our knowledge originated, an institution deserving adoption by every other medical society in the land, we might say in the world, *i. e.*, a "Black Book," in which are recorded from time to time, by any member so desiring, the names of all patients willfully and maliciously negligent of their reciprocal obligations to their physicians. This "Black Book" remains in the custody of the Secretary, subject to inspection by the members at their pleasure—who, by thus putting on record the authors of their misfortune, protect each other from the danger of similar disaster.

There are in every community swarms of social sponges, vulgarly termed dead-beats, who, scorning to pick a pocket or rob a bank, have no hesitation in robbing physicians of their time and services.

For the preservation of the names of all such from unmerited oblivion, we commend to all Medical Societies the institution of the "Black Book." W. H.

The attention of our readers is especially directed to the history of a case of rheumatic endocarditis, reported in this No. of the JOURNAL by Dr. H. A. Johnson, Professor of Diseases of the Respiratory and Circulatory Organs in the Chicago Medical College. For the conduct of this case, Dr. Johnson has been most unjustly assailed in the columns of one of the secular papers by a member of the patient's family.

Those who know Dr. Johnson, personally or professionally, will ask of him no explanation or defense—his life and practice preclude the necessity for either. Those who do not know him, will find that the report is its own justification. W. H.

OFFICE OF THE MEDICAL REGISTER AND DIRECTORY OF THE UNITED STATES
No. 115 South Seventh Street,
Philadelphia, June 6, 1873.

DR. J. ADAMS ALLEN, Chicago, Ill.:

Dear Sir—It is *very* important to medical men that they appear in the Medical Register and Directory of the United States, with their proper educational and professional status. Please urge it on your readers, in your next number, to reply, *at once*, to the circulars sent them; or, if they have not received one, to apply to me. Very truly yours, S. W. BUTLER.

We comply with the above request most cheerfully, and as the most effectual mode of doing so, present to our readers the letter of Dr. Butler, entire, which speaks for itself.

Reports of Societies.

Illinois State Medical Society—Annual Meeting.

The twenty-third annual meeting of the Illinois State Medical Society, convened in Bloomington, May 20, 1873.

The delegates and members assembled in Durley Hall at 10½ o'clock A. M. The President, Dr. D. W. Young, of Aurora, occupying the chair, called the meeting to order, and introduced Rev. Dr. Wilson, who offered prayer.

Dr. T. F. Worrell, Chairman of the Committee of Arrangements, was then introduced, and delivered a brief address of welcome on behalf of the citizens of Bloomington. This was responded to, on behalf of the Association, by Prof. E. Andrews, of Chicago.

Brief addresses of welcome were also offered by Ira J. Bloomfield, on behalf of the municipal authorities; on behalf of the Board of Education, by J. A. Jackman, Esq., which were responded to by members of the Society, after which the meeting adjourned until 2 o'clock P. M.

On reassembling at 2 o'clock the Society proceeded to business. The Committee on Credentials made their report, and the roll of officers of committees was called by the Secretary.

The first paper read was the report on Surgery, by J. L. White, M.D., of Bloomington. This was an able and interesting report, and elicited considerable discussion.

Dr. Hamilton next presented a report on Fractures, supplementary to the report on Surgery. It was an extended paper, mainly made up of statistics.

Dr. E. L. Holmes read the report of the Committee on Ophthalmology. The Secretary also read an interesting paper on the Uses of Strychnia, prepared by Dr. F. C. Holtz, of Chicago.

The Society then adjourned until 7½ o'clock P. M., when they reassembled to listen to the address of Dr. Geo. T. Allen, on the "Civilization of the Age."

Following this address, Dr. McFarland read a paper devoted mainly to the subject of the Jurisprudence of Insanity.

The Society reassembled again at 8½ o'clock A. M. The first business in order was the report of the Treasurer, Dr. Hollister.

The report of Dr. Hamilton, on Fractures, was again called up and discussed at length by various members, particularly the points in relation to the possibility of preventing shortening in oblique fractures of the femur. It was the pretty unanimous opinion of the members that some degree of shortening would almost invariably and unavoidably result, although the statistics given in the report of Dr. Hamilton seemed to favor a contrary opinion.

The report on Drugs and Medicines, by Dr. Hollister, was next read and discussed. Dr. Prince, of Jacksonville, also submitted a report on Galvano-Therapeutics.

The Committee on Nominations submitted the following report:

For President, Dr. T. F. Worrell, of Bloomington; 1st Vice-President, Dr. E. L. Holmes; 2d Vice-President, Dr. Birney; Treasurer, Dr. J. H. Hollister. Next place of meeting, Chicago.

Committee on Practical Medicine—Dr. H. Crawford, Monmouth; Dr. John Wright, DeWitt; Dr. Van Horn, Jerseyville.

Surgery—Drs. W. P. Pierce, P. Raskatin, E. R. Willard.

Obstetrics—Drs. S. E. Plummer, C. T. Hassian, Robert Beal.

Drugs and Medicine—Drs. W. E. Quine, Chicago; R. W. James, Danville; E. P. Cook, Mendota.

Ophthalmology—Drs. E. L. Holmes, J. P. Johnson, F. C. Holtz.

Otology—Drs. S. J. Jones, Chas. Hunt, Thos. Galt.

Special Committee on Idiocy—Dr. C. F. Wilber.

Galvano-Therapeutics—Dr. D. Prince.

Pathology of Nervous System—Dr. C. W. Earle.

Dermatology—Dr. Chas. G. Smith.

Phthisis Pulmonalis—Dr. J. H. Hollister.

Strictures of Urethra—Prof. Andrews.

Diseases of Respiratory Organs—Dr. Daniel Lichty.

Committee of Arrangements—Drs. N. S. Davis, W. E. Quine, Chas. G. Smith, E. Powell.

Assistant Secretary—Dr. W. E. Quine.

The report of the Nominating Committee was unanimously adopted.

A report on "The Assistance Necessary and Justifiable in Difficult and Protracted Labor," by Dr. S. D. Hawley, was read by the Secretary. The report elicited extended and various criticism and discussion, which space does not permit us to report. The Society again adjourned until evening, the afternoon being spent, at the invitation of the Committee of Arrangements, in visiting the State Normal School, the Soldiers' Orphans' Home, and the C. A. & St. L. R. R. machine shops. At each of these places the Society was welcomed by the authorities in charge.

The Association reassembled in the evening session at 8 o'clock P. M.

Dr. Worrell read a report upon Hygiene, and in connection with it a supplementary report, prepared by Dr. N. S. Davis, on the Hygienic Management of Children.

A report on the Physiology of the Nervous System, by Dr. Earle, the report on Otology, by Dr. S. J. Jones, and a report on Obstetrics, from Dr. T. D. Fitch, completed the list of reports presented.

On motion of Dr. Hollister, the Association proceeded to the election of delegates to the American Medical Association, the following named being chosen:

Drs. A. H. Luce, J. O. Hamilton, E. Goodbrake, E. P. Cook, W. P. Pierce, D. Prince, C. T. Homer, J. H. Hollister, W. W. McMann, S. H. Birney, C. W. Earle, J. B. Walker, Haller, W. E. Quine, E. R. Willard, Whitmeyer, E. R. Travers, J. P. Mathews, E. W. Hewett, D. Young, T. D. Fitch, O. W. Moon, John Lyttle, A. C. Rankin, O. Everett, F. H. Davis, J. G. Curtis, S. E. Plummer, F. M. Wilder, J. L. White, A. S. McArthur, N. B. Cole, D. McVey, C. Armstrong, and A. McFarland.

Dr. Fitch moved that the Association proceed to the election of delegates to State Medical Societies. The motion was carried, and the following persons were elected:

Drs. G. W. Jones and Birney, to Indiana Medical Society; Drs. Gray and Ellsbury, to Ohio; Drs. M. Gunn and E. L. Holmes, to Michigan; Drs. McArthur and Irwin, to Wisconsin; Drs. T. D. Fitch and J. Galt, to Iowa; Drs. C. R. Cook and J. O. Hamilton, to Missouri; Drs. T. F. Worrell and E. R. Willard, to Minnesota.

A motion from Dr. Hollister that the annual assessment be fixed at $3 for the year, was carried.

After passing resolutions of thanks to the Committee of Arrangements, the municipal authorities, and others who had assisted in entertaining the Association, the meeting was adjourned *sine die*.—*Med. Examiner*.

THE

Chicago Medical Journal.

A MONTHLY RECORD OF

Medicine, Surgery and the Collateral Sciences.

EDITED BY J. ADAMS ALLEN, M.D., LL.D.; AND WALTER HAY, M.D.

VOL. XXX. — SEPTEMBER, 1873. — NO. 9.

Original Communications.

ARTICLE I.—*Hamlet's Insanity.* By HORATIO R. BIGELOW, M.D., Boston, Mass.

Were it not for the fact of its recent revival, it would seem to be scarcely necessary to revivify the old discussion which modern inquiry had so satisfactorily laid to rest. In his recent lecture in New York City, Mr. Mac Donald not only emphatically asserted his conviction of Hamlet's sanity, but even ventured the statement that no student of the present day believed otherwise.

With this latter we have little to do, for he who has followed the scientific inquiry with which the past decade has been rich and rife, can easily confute so rash and venturesome a tale, by citing the opinions of pathologists, psychologists and physiologists of acknowledged ability. Strange too, it is, that in the face of evidence and fact, Mr. Mac Donald should have thus committed himself; for since the occasion was a public one, his words become legitimate subjects of criticism. The facts which were adduced to establish the sanity of Hamlet, were so weak, so illogically put together, and so entirely contradictory, as to militate against the

celebrity of the lecturer, rather than add to his trans-Atlantic reputation.

Before coming to the ultimate discussion, it will be necessary, by way of preface, to form some definite ideas upon the following points:

1. What mental condition is it, which entitles any one to judge of the creations of genius or to read the secrets of the minds of others?
2. What is insanity?
3. How may it be caused?
4. What are its divisions?
5. Was the creation under observation—Hamlet—insane?

The necessarily narrow limits to which journal articles are restricted will be one excuse for the brief manner in which each of these divisions will be treated; but if some new field of thought be opened up to the unbiased student, one object will be attained. The extent of our adaptation to external realities by prototypical cerebral reaction will be the measure of our mental astuteness; the more harmonious the creation and outward action of our ideas, the more fitly adapted are we to peer into the ideational reactions of others. The mere metaphysical, subjective introspect will avail us to no purpose; for the abstraction which is necessary for the performance of conscious scrutiny, withdraws from mental freedom, that which is necessary for its perfected entity, and creates abnormal existence in the object to be analyzed by self-consciousness. Thus, such a method, by rendering our own mental state unhealthy, is entirely incapacitated in its application to others. One idea must follow another in logical sequence, insensibly blending one with the other, as the wave motion of the wind travels over a field of grain, its residual force being transferred from cell to cell, creating in each its proper function. The force generated by wholesome thought is partially expended outwards, the residue furnishing the stimuli of future creation. If an idea fail to act in this manner, there ensues a prolonged tension of the ideational centre, and self-consciousness results. It is not by any subjective analysis of our own minds that we can correctly judge of others, but rather from a consideration of man's relationship to external objects; from the study of the higher faculties in the animal, as well as in all the phases of the human kingdom, the babe, the insane, the

idiot, and from the knowledge which we thus by acquisition attain, of the results which certain stimuli in the ideational cells bring about. That which we would do under similar surroundings, is no criterion of the action of others. Will is not an innate, constant quantity, but a variable force, arising from the experience of past generations, determining an event, but in no wise governing the means by which the end is consummated. Forgetting, so far as is possible, our consciousness in thought, (for when we once become conscious that we are thinking, an unhealthy action results), we must study the mind in all its varied phases of existence and action, and in this way only can we become polished critics.

2. What is insanity?

In reply to this question, we will give the definitions of two of the ablest thinkers, in the particular field of mental diseases, which our age has produced. Dr. Maudsley, of London, thus defines it: "A morbid derangement, generally chronic, of the supreme cerebral centres—the gray matter of the cerebral convolutions, or the intellectorium commune, giving rise to perverted freedom, defective or erroneous ideation, and discordant conduct conjointly or separately; and more or less incapacitating the individual for his due social relations."

Dr. Hammond, of New York, says: "A manifestation of disease of the brain by general or partial derangement of one or more faculties of the mind, and in which, while consciousness is not abolished, mental freedom is perverted, weakened or destroyed."

Mind then, it is presupposed, is the perfected force generated by the supreme or ideational centres, represented in the hemispherical convolutions and cortical cells of the brain. When these cells cease to react upon each other harmoniously, when an idea prolongs its tension so as to tyrannize over the understanding and become an absorbing entity, illusions and delusions result, and the person is pronounced insane. When the sensory ganglia are abnormally active or viciously constituted, their reflex and transmitted actions become disordered; we have, as a direct cause, hysteria, and indirectly, through the force transmitted upward, a phase of insanity.

It is important to remember, that mind is not an abstract, incomprehensible agent, but that it is a natural force, and that its location is the brain; that to call it into action, certain stimuli alone are needed. With this consideration fresh in our memory, we can better understand the chief point.

3. What are the causes of insanity?

Naturally, anything that will interfere with the healthy action of the mental function—inherited acquisition of vicious action; want of vitality in the nervous tissues; improper cerebral nutrition; association; shocks; excessive emotional activity; and various other causes which it would be superfluous to narrate. By far the most frequent cause, is the inherited tendency. The various neuroses, which, in every generation, and in members of the same generation, will often assume a variety of forms, will engender the peculiar abnormal psychological condition, which a sudden shock will develop into true insanity. The circumstances of life may imbue the mind with an idea so absolute, as to render the mental action secondary; the idea becomes morbidly conscious, it dwells constantly upon itself, and rears up the various unhealthy mental phenomena. Our associations may be such as to induce it. Many periods in the world's history have been characterized by such tyranny of action. The dancing epidemics, and the superstitions of every age, are samples. Constant communion with those imbued with such creeds, will taint, oftentimes, the healthiest mind. Religious fanaticism, excess of religious observance—the one a result of insanity, and the other a cause—have marked each step in the world's advance. Hamlet himself explains its cause, when he is made to say—

> "So, oft it chances in particular men,
> That for some vicious mole of nature in them,
> As, in their birth, (wherein they are not guilty,
> Since nature cannot choose his origin,)
> By their o'ergrowth of some complexion,
> Oft breaking down the pales and forts of reason."*

It may result from the emotional condition. Spinoza has divided the emotions into three classes: 1. Pain; 2. Joy; 3. Desire. A morbid activity in any of the ganglia representing these conditions may transmit its poisoned tone upward, and upset the reason. Visceral disease may cause a variety in this way: a sense of the existing trouble is transmitted through the proper channels to the sensory ganglia: these become unduly active, and send upward false impressions to the brain. The idea, thus excited, becomes dominant, directing its sole attention to the affected organ, exaggerating

* Act 1, Scene 4.

its defect, creating an infinity of ailments, and we have one form of hypochondria.

4. What are its divisions?

It is sufficient for our present purposes, to adopt the usually received division of Esquirol:

Mania, { Acute. Chronic. Recurrent.

Monomania.

Melancholia.

Moral Insanity.

Dementia, { Primary. Secondary.

Idiocy.

General Paralysis.

It will not be necessary to dwell at length upon this head, or upon the localization of the various lesions; a proper consideration will enable us without difficulty to recognize the different mental departments or divisions involved in each.

5. If we have considered carefully the nature and causes of insanity and the regular working of the human mind, much of seeming difficulty will be wiped away from the discussion of the final question. We can also, now, look more closely into Mr. Mac Donald's statements, and apply, as corroborative proof of Hamlet's insanity, the very facts which that lecturer adduced to maintain his own position—that of Hamlet's mental sanity. And first, what was the condition of the continent of Europe, in regard to its habits of thought, during the time of Hamlet's life, and for a period of years before that time? Every decade of that eventful century was marked by some peculiar general aberration of mind, which, commencing in a remote corner, rapidly spread its flight throughout the land, gathering in its ways old and young, rich and poor. The superstition of religion, the abstraction incident upon the peculiar studies so popular at that time, that peculiar psychological condition which inaugurated the orgies of St. Jean Baptiste in France, the dancing mania of Italy and in Germany, were the excrescences bursting out of the accumulated experience of generations, and which were generated by unhealthy mental condition. It was an age peculiarly fitted for the advancement of the most paradoxical theories, for the development of unnatural habits

of reverie, well suited to foster long-continued and abnormal mental strain, directed toward ends which can never be attained, or toward the contemplation of that which was the fictitious image of an overwrought imagination. Could a student, eagerly pursuing his studies, and zealously reaching out for the veiled and hidden things of life, escape such contamination? Again, what were Hamlet's inherited tendencies? Surely no one, with a due knowledge of human nature, can assert that they were unblemished. Were there not particularly well marked mental characteristics of unwholesome kind in the lives of his mother and uncle? Is it assuming too much to suppose that in the death of the King of Denmark by his own brother, there is foreshadowed over the path of young Hamlet, an all-powerful force which he could not *will* to put away from him, and which attained its consummation in the death of the uncle at the hands of the nephew, or that the mother's want of moral stability may not have been transmitted in embryonic life, leaving its brand upon the mental condition of her offspring? After leaving his university at Wittenberg, at the age of thirty, where he had imbibed much of that habit of thought, no doubt, so current at that time, he lost his father. This was the first real blow of his life. A severe one to so affectionate a son; one sufficient to engender unhappy thought in a mind already weakened by inheritance and by surroundings. It weighed upon him constantly; an onus far too heavy for him to carry alone. It became an absorbing, dominant idea, resulting in a fondness for seclusion and for self-conscious, persistent contemplation. It was the first visible commencement in the work of mental disintegration. Then he is informed by the *ghost*, of the manner in which his father had died. This was the only stimulus needed to create that disruption of the ideational centres in respect to their anastomoses, for which the way had already been paved, and which resulted in that melancholic condition which ceased only with death. Is it not easy of comprehension, how an overwrought mind, congenitally unreliable, could be turned aside from a normal condition by a series of such life-long shocks? Notice, too, the manner in which such information is given! The ghost, first seen by Horatio and others, then by Hamlet, what was it but an ideal creation—a hallucination arising out of the overstrained cell in which had festered the dominant idea of the recently buried King; the residual force

of the impression which had been formed during the life of the King, and which, acted on powerfully by the emotions, thus spent itself externally? See how the hallucination reappears when the necessary stimulus is applied. (Act III, Scenes III and IV.) The religious sentiment which withheld the suicidal desire of Hamlet, as well as the existence of the idea itself, are strong points in the chain of evidence, on which is based the assertion of his insanity, and of that division of it known as melancholia. In many cases of this disease, the religious fervor is the first manifestation of its outbreak, while in others there is often suicidal impulse. His first meeting with Ophelia is characterized by a great want of logical coherence and by bitter cynicism. He confesses to having nocturnal hallucinations (Act II, Scene III), and laments his own changed and saddened condition (Act II, Scene III). The celebrated soliloquy (Act III, Scene I,) is the morbidly conscious introspection of the Ego—the unhealthy tension of an all-dominant thought of which he cannot rid himself. The nature of his father's death is constantly before him; to it all else is referred. His insanity becomes manifestly evident to friends and relations. (Act I, Scene V. "He waxes desperate with imagination." Act II, Scenes I and III, Act III, Scene IV, *et al.*) He mistakes Polonius for another, and addresses him in a most erratic manner; and all his conversation is the emanation of the unhealthy, tyrannical and self-conscious idea of which he is possessed. What boots it that his fencing was the best in Denmark? One of the most accomplished chess-players that we have ever met, was a chronic case of insanity. He dies—and how? Poisoned. The faint reflection of an abnormal growth, which was mirrored in his earlier life, had grown to such dimensions as to assume the controlling power.

Thus passes away one, a victim, by inheritance and association, to a morbid psychological condition. Who will cast the stone at one thus dying, for the deeds he worked in the flesh, impelled by a nervous condition implanted in him which he could not conquer? Who, in instances of such a nature, can maintain that will is an innate, constant quantity, dependent upon nothing?

ARTICLE II.—*Case of Wound of the Liver.* By G. W. STEWART, M.D., Muscatine, Iowa.

Anthony B., a lad aged 17, while standing beside a plow team, with the reins about his neck, had his team attempt to run off, and before he could stop them he was thrown on his face in front of the plow, the point of which, engaging him in the region of the small of the back, and dragging him for some distance, inflicted the following described wound:

A semicircular incision in the left hypochondriac region, beginning at a point over the fourth lumbar vertebra, passing first forward and upward, thence backward to a point opposite to and about one and a half inches from the first lumbar vertebra, measuring at the surface, eleven inches; penetrating the integument, passing through aponeurosis of transversalis muscle, latissimus-dorsi, sacro-lumbalis, longissimus-dorsi, serratus-posticus-inferior, and quadratus-lumborum muscles, engaging the twelfth rib and denuding it of its periosteum in its anterior or outer third; passing through the peritoneum and entering the liver at the left lateral ligament, passing inward, forward and upward, in a direction toward but stopping just short of the intersection of the longitudinal with the transverse fossa, within which, and only a few lines beyond the terminus of the incision, could be distinctly felt the hepatic artery. Nearly or quite all of that portion of the left lobe of the liver anterior to the incision in its substance as described, we found protruding through the wound.

We saw the case about two hours subsequent to the occurrence of the accident, and in addition to the particulars already given, found our patient and his wound in the following condition:—Patient nearly comatose from loss of blood; hemorrhage, however, being from small vessels only, had ceased. The integument bordering the wound, was very much retracted, as were also the muscles through which it (the plow) passed, except the latissimus-dorsi at its inferior border, where, from the direction of the incision, the muscular fibres were simply separated—thus presenting a wide and gaping wound.

Upon passing our hand into the abdominal cavity, we found present a large amount of blood, which we removed with a sponge, and continued our search for more extended injuries than those

already described; examined the stomach, which, being empty, and in a partial state of collapse, had escaped injury; as had also the intestines, diaphragm and other organs. The abdominal aorta could be distinctly felt in the floor of the wound, but uninjured.

TREATMENT.—Seizing that portion of the liver protruding from the wound, we replaced it as nearly as possible in its normal position; but upon removing our hand it came immediately out again, seeming to require considerable pressure to maintain it in place; we returned it a second time, and employed an assistant to retain it in position until we could close up the wound, and apply over it a compress to hold it securely in position.

The periosteum of the twelfth rib being only split, we gave it but little attention, thinking that it would take care of itself; and hemorrhage having, as we said, ceased, we proceeded to close up the wound; in this we experienced some difficulty in consequence of the extensive laceration of tissues, but finally succeeded, and finished the dressing by placing over that portion of the liver which had been displaced, a large compress, and over that and around the body several times, a wide roller bandage.

We then directed that cold water be applied to the wound every fifteen minutes, which we continued for ten days, making no changes during that period, other than removing, after the lapse of twenty-four hours, the compress, the pressure of which we feared might induce inflammation, and on the third day beginning the use of carbolic acid, a weak solution of which we applied once every hour.

Fearing peritonitis, and expecting it to manifest itself within two or three days, we were very sparing of diet, allowing our patient for some days only articles of the blandest character. Administered on the second day, that he might obtain sleep, an opiate, with the direction that in case of the occurrence of pain in the wound or its vicinity, there be given every hour or two a powder containing a grain of pulverized opium.

On the sixth day the wound began to discharge pus quite freely, and mixed with it was a greenish substance that we took to be bile, the latter of which was kept up for a period of two weeks.

Our patient gained strength from the first, pulse becoming from day to day more firm; the wound, which we dressed daily, looked

healthy, and, what is remarkable, there *never appeared at any period the first indication of peritonitis.*

On the twelfth day danger of inflammation being passed, or less imminent, we began to apply less frequently our cold water, applying it and the carbolic acid every hour, and also to feed our patient more liberally.

At this time the flaps sloughed off, and exposed to view the liver, and also the twelfth rib, the former of which we discovered to be protruding somewhat through the wound, a portion equal in measurement to a two inch cube being external to the quadratus-lumborum muscle; we endeavored to reduce it as at first, but discovered obstacles in the way; adhesions had formed between the walls of the abdomen and both the superior and inferior borders of the left lobe, which rendered that lobe immovable.

It being impossible for the wound to heal in this condition, we resorted to the use of caustics and the knife, (using the caustic potash), for the purpose of getting rid of this protruding portion of the liver, applying the caustic daily, and afterward paring off with the knife cauterized material, until the prominence had disappeared; having in readiness the actual cautery to use in case of troublesome hemorrhage, should we go too deep with the knife, but no hemorrhage sufficient to occasion alarm occurred.

We next examined our rib denuded of periosteum, and discovered that it was not taking care of itself so nicely as we anticipated it would, and after watching it a few days, decided that amputation would be necessary, as it was becoming still more denuded, and besides was standing out more prominently than it should, and irritating the wound, preventing it from healing kindly; therefore with bone forceps we removed about one-half of it. This gotten rid of, the wound improved in appearance; the two fragments of liver united very perfectly as we could discover, being able to see the line of union in a part of its course; the cauterized surface healed speedily, and granulations sprang up rapidly in the muscular tissue, continuing until the divided muscles were reunited and integument formed over the entire surface.

The wound was inflicted May 7, 1873, and can be said to have terminated in complete recovery in about seventy days time—a result to us unexpected. We have searched for and examined histories of cases reported of a similar nature, and although there

may have been recoveries in cases of a like character and as severe, we have not yet found them. Recoveries are reported, but none whose histories we have seen in which the injuries were so extensive.

ARTICLE III.—*Concerning Amalgam Dental Plugs.* By W. HENRY KING, M.D., Mount Sterling, Ill.

Having just read, in the July number of the CHICAGO MEDICAL JOURNAL, an article on "Poisoning from corrosive sublimate generated in the mouth from amalgam plugs in the teeth," by J. Payne, D.D.S., of Dwight, Ill., I feel so "strangely queer," I scarcely know what *manner* of reply to attempt—and I would make none, were Dr. Payne's the first hollow notes set to the same inharmonious tune. I hardly know how or where "to take him," or what to do with him after the taking. Emotions crowd so thick and fast, I know not what to do. "You'd scarce expect one of my age"—no, that won't do. Well, "Fools rush in where angels dare not tread"—no, nor that either.

> "O, were you ne'er a schoolboy,
> And did you never feel
> That swelling of the heart
> You ne'er shall feel again?"

And now I fancy "commencement day," "pigeon-tailed" coats, ribbons—and parchment paper done up in tin canisters; and backward yet to primer days, and the rudiments of chemistry and other *trifles*, memory wings her course. But, hold! My pegasus is about getting entirely away with me. I was about to remark, I am a very modest man, and do not like, as some people do, to parade myself unnecessarily before the public. I am an humble individual, and no "eminent gentleman of the medical profession" ever condescended to pay any particular attention to me, and so my little effort must "go on its own hook." There is, however, nobody in this locality much alarmed about "amalgam plugs," but lest there be an epidemic of fright in the vicinity of Dwight, we propose to take down that scare-crow, dissect it, and ascertain, if possible, whether the altitude it reached in its dizzy flight was due to its light frame-work, or to excessive muscular development

at the expense of intellectual training, and as we pass along, *laugh* where we must, and be earnest where there's room—always adapting, in our hunt, our ammunition to the target raised.

And, first of all, years of *experience* warn me not to advocate the use of amalgam plugs, *only in exceptional cases.* They are to be condemned for general use, but on altogether different grounds from the ensuing chemical combinations claimed by Dr. Payne.

Dr. Payne says, "every medical man, of any considerable practice, has undoubtedly had numerous cases of it," *i. e.*, "poisoning from corrosive sublimate generated in the mouth from amalgam plugs in the teeth, *but never knew what it was.*" No doubt! No doubt wisdom and knowledge are on the increase, and revolve around Dwight as the great centre or fountain of all scientific light! No doubt the general ignorance of medical gentlemen, during the past fifty years of "amalgam plugs," has been so intense that they left this great discovery of "plug" poisoning to Dr. Payne, while they were busy treating patients suffering from "so numerous and varied symptoms" for all the troubles that gentleman has catalogued!

Again, he says: "The patient gradually wastes away as if going into a decline," [how 's that! has Barnum got one?] "*and no medicine will afford any relief.*" No wonder! Sic. Send for McGinnis. Now it is a pity Dr. Payne "had not time to delineate *the manner* in which corrosive sublimate is formed in the mouth," [and to give us the symbol and atomic weight of the new *element*, "any saline substance, such as food,"] "further than to say that the quicksilver in the plugs is driven off by the heat of the mouth in minute particles, and combining with the chlorine in the fluids of the mouth, *or any saline substance, such as our food*, passes into the stomach, and produces slow poisoning."

Take time, Dr. Payne, and describe this process scientifically, and rival Jenner by your fame!

Now what are the facts in the case? Let us briefly state them.

1. The symptoms Dr. Payne describes, in the main, do not appertain to the mercurial diathesis.

2. If the state of health described were induced by mercury, every respectable practitioner knows remedies that will relieve it, if Dr. Payne don't.

3. "Amalgam plugs in the teeth" do not disturb or derange

the health of *any one* in the slightest degree on account of the mercury they contain, directly or indirectly, and no one dare attempt to sustain such a proposition *but a homœopathist*, and even he would blush at the result.

Let us use figures—not bombast—and approximate the truth. Yesterday, I removed four fillings from grinding surfaces after they were worn in different mouths for seven years. This number of fillings (four) would be a very large average for one mouth to contain. The aggregate weight at the time of insertion was thirty-six grains, viz.: silver and tin, twenty-two grains; mercury, fourteen grains. The weight seven years after: silver and tin, twenty-one grains; mercury, twelve. That is, four plugs in seven years, or 2,556 days, lose two grains of mercury, or one grain in 1,278=$\frac{1}{1278}$ grain of mercury per day. Now, if, after the plug has once become hard, mercury escapes into the mouth, it must do so through the agency of heat, and as the mouth has a *constant* temperature of 98.4°, the escape of mercury must be *constant*. How, then, since mercury, *i. e.*, bichloride of mercury, is *not* cumulative, will Dr. Payne explain these *sudden* "poisonings and prostrations"?

Mercury, as mercury, is inert. Chlorine is found in the saliva, only in combination with potassium and sodium, and only acts on mercury when in excess. Now, does the chlorine give up the powerful bases, potassium and sodium, for mercury? We deny it. But suppose it did, how much bichloride of mercury would $\frac{1}{1278}$ of a grain of mercury form daily? Let us see. Atomic weight of Hg.=100 of Cl.=35.5. Then 271 : 200 : : 1 : amount of Hg. in one grain Hg. Cl.; or one grain Hg. Cl.=.73 parts mercury, plus .27 chlorine; or one grain of mercury will make 1.37 grains corrosive sublimate, and .1278 grain of mercury would make .932 of a grain of corrosive sublimate in the mouth daily. Now, allow $\frac{1}{3}$ of a grain of corrosive sublimate as the ordinary dose, it would only take 186 days to get a dose in the manner described by Dr. Payne. Now, if all this will not answer this much mooted question, look at it another way. If you expel *all* the mercury from a plug by a slow low temperature, the remaining metals will be but a fine powder; so as long as a filling remains solid *it contains mercury*. I saw an amalgam plug to-day that still *fills* up the cavity in which it was placed *thirty years ago*, and it remains dense and hard. This filling, according to the proportional amount of mercury required

at the time of insertion, could not have contained more than four grains of mercury and still holds some, and just such fillings have been worn for sixty years, without harm, and will be worn again, long after friend Payne has gone "where the woodbine twineth."

In conclusion, allow me to recommend the State Medical Society to send a committee to Dwight in search of candidates for Jacksonville, and to petition the next General Assembly for a law to hang *every man* who knows of 12,000 people daily destroying more lives than all the cholera, etc., in the land, *and will not take "time to delineate the manner"* in which the poison is formed, though he knows it to a certainty. "Let us have peace." What next?

ARTICLE IV. — *Puerperal Fever. Treatment by Intra-Uterine Disinfection.* By J. E. O'BRIEN, M.D., Scranton, Pa.

Having had several cases of puerperal fever during the past year, I have given them much study, and made an advance in treatment which I do not find on record; if the same should have escaped my limited researches, however, I beg to be directed to it.

In all the cases of puerperal fever, which I have seen, I have recognized the presence of a septic poison in the womb, the detritus of placenta, membranes, or clots; or pus, a result of inflammation caused by violence at the hands of the midwife. The axiom which I would give the profession, (if I have not been anticipated), is—

To neutralize the septic matter by *intra-uterine* injections of carbolic acid.

A very good illustration of the treatment usually employed, may be found in the JOURNAL, Vol. XXVI, p. 110, but nowhere have I found a suggestion of anything *beyond* opiates, eliminants, and disinfectant vaginal injections. The latter as recommended in our text books form a curious anomaly in practice, for it is not the vagina which absorbs the organic poison, but the open veins of the womb, or its absorbents now actively engaged in the process of involution.

The most serious objection to intra-uterine injections in gynæ-

cological practice, is the alarming colic which they produce unless their exit be provided for by previous dilatation with sponge tents; the syringe which has been constructed to return injected fluids is practically a failure. This objection, however, does not apply to the post-partem uterus, as it has been dilated, and is tolerant of fluids, and used to expelling them.

In a recent case of commencing puerperal fever, I injected into the womb four ounces of warm water, which washed out ropy, offensive pus; I then injected two ounces of warm water, containing half a dram of carbolic acid (crystals). The patient had a slight colic after the water injection, but none after the carbolic acid, and in a few minutes she said that the soreness of the womb, which had been very great, was easier; she then took carthartics, Dover's powder, had hot water, in flannel, to the abdomen, etc. The lochia, previously suppressed, occurred again immediately after the syringing, and continued profusely.

Six hours later the fever was less, the soreness of the abdomen much better, tongue cleaner, lochia continuing, and further injection, which I had determined upon, apparently not required. The next day she had stitches in the right and left hypochondrii, and one or two spells of faintness, but she made a good recovery. I would not attempt to prove anything by a single case, but I believe the proposition is self-evident that if we think there is septic matter in the womb we ought to reach it directly with disinfectants.

A syringe with a long tube, curved like a uterine sound, is necessary. (They are made with a return gutter, which, as I have said, is generally useless.)

ARTICLE V.—*April Fooled.* By L. B. BROWN, M.D., Sheldon, Ill.

Was called, April 1st, 1873, to visit Mrs. J. W. Smith, a farmer's wife, age 36 years, weight about 150 pounds, of stout build,—(short and thick is a fair expression)—probably of German extraction.

I found the woman in bed, perfectly comfortable, except from fear that all would not be well with her, having been delivered of a child about eight hours before my arrival by the assistance of a

midwife—who, by the by, is a very intelligent and successful one—I must say a *rare* specimen of that class as found in the country.

On examination of the abdomen, which particularly attracted my attention, I found it *enormously* distended generally; no pain on pressure, no motion, described by the woman; nor could I detect anything satisfactory. Made examination per vaginam; passed my finger into the os, without difficulty; detected nothing but the cord of the child that had been delivered—made slight tension upon it, with my other hand upon the abdomen—cord easily gave way, and *I was lost.* Does any one suppose the midwife in attendance had been *pulling* at that cord? I suspected and conjectured "muchly"; one thing I thought I knew beyond doubt, to wit, that there must be a retained placenta. Remembering that ergot had been used many times with different results, and having some of Thayer's Fluid Extract, I commenced with twenty drops, repeated every fifteen minutes until four or five doses were given. The woman complained of being dizzy and sick at the stomach; pulse very feeble, surface cold and clammy; vomited; resorted to hot tea and whisky. In about half an hour reaction was sufficiently established, and I was fully satisfied with the pernicious effects of ergot, in that case in particular.

During all this time, two hours or more, there were no uterine pains, no motion, no nothing—but one child, and anxiety.

Determined to introduce my hand into the uterus, I immediately made the effort, and succeeded without difficulty. Found about a hand's length from the os, the back of a child; the vertebræ being my guide, I easily made fast to the inguinal region with my forefinger, and by the aid of a broad towel placed over the abdomen, with an assistant at each end pulling downwards, I delivered the woman of a living child, without any perceptible uterine contractions.

Size of the abdomen not materially diminished; patient comfortable; continued pressure with the towel and introduced my hand again; found sack presenting of large size—was not fully satisfied as to the character and contents; I ruptured the sack, and a very large amount of water escaped, probably two quarts; the abdomen somewhat diminished in size, and to my surprise, the head of another child presented, which I clasped in my hand, and by the

aid of the towel as before, delivered the woman of the third living child, without uterine pains.

I now proceeded to prospect for the placenta by introducing my hand, (which was a very easy matter), and, to my utter astonishment and consternation, the head of another child, if possible, presented, which I delivered in the same manner as before, instructing the assistants to pull harder on the towel. Four living children.

During the birth of the fourth child there were slight labor pains.

Now for the afterbirth, with fear but no trembling.

I took the three remaining cords, twisted together slightly, in one hand, introducing the other hand into the uterus and grasped the mass, then gradually but carefully made tension upon the cords, at the same time using other means to excite uterine contractions, which were more forcible in the delivery of the placenta than with the last three children.

The woman was very much exhausted, notwithstanding she had no severe labor pains (owing, no doubt, to the extreme attenuation of the walls of the uterus). I was fearful syncope might overtake her, from the removal of the compression to which the abdominal veins had been subjected. A broad bandage was immediately fixed around the abdomen tightly, and mild stimulants administered. No trouble in maintaining a contracted state of the uterus.

The children: all girls, perfectly formed, and of fair size, very similar in shape, rather long and slender; round heads, well ossified; aggregate weight eighteen pounds—two weighing five pounds each, and two weighing four pounds each.

The placenta was quadrilateral in form, twelve or fourteen inches square, and of the usual thickness. The cords were regularly attached, about seven inches apart. I did not weigh the placenta, —probable weight six or seven pounds.

Taking the aggregate, children, placenta, and liquor amnii, which could not be acurately estimated, though in my opinion not less than three quarts, it will require some stretch of the imagination to comprehend the appearance and condition of the woman before and during labor.

In 129,172 births in the Lying-in Hospital of Dublin, there were 29 cases of triplets and one of quadruple birth.

From British, German and French records, the following is reported: 666,424 cases, 8,006 twins, 87 triplets.

This extremely rare occurrence of quadruple gestation, and the still greater rarity of four living, perfectly formed, fair sized children, is my excuse for reporting the above case.

The children are now (July 17) three and one-half months old, and in a prosperous condition, weighing respectively 11, 10, 10, 9 pounds; total, 40 pounds.

ARTICLE VI.—*On the Unity or Duality of Syphilis.* By JAMES NEVINS HYDE, A.M., M.D., Chicago.

Article II of the April number of the *American Journal of the Medical Sciences*, for 1873, is entitled, "On the Present State of the Question of the Unity or Duality of Syphilis, by Freeman J. Bumstead, M.D., of New York." Its author is an eminent syphilographer and a well-known advocate of the tenets of the dualistic school. His opinions are worthy of careful consideration, and the exceeding interest of his subject and his style have placed the article referred to prominently before the profession. After a recital of certain facts which have been brought into notice by some experimenters in Europe, he observes:

"It would be useless to deny that the results of the recent experiments given above, were unexpected by the dualistic school, and cannot be explained by them in accordance with the views which they have held."

I am venturesome enough to believe that these results can be explained, in great part, according to the views held by the dualistic school—*quorum pars sum*—and, in the attempt, shall premise the following statements of some of their views:

1. Every infecting chancre is necessarily followed by syphilis in one who is the subject of it and in another to whom it is transmitted, when no treatment has been pursued.

2. Syphilis has a definite career. It commences with an in-

fecting chancre, but does not recur to an infecting chancre while its energies are unexhausted and not controlled by remedies.

3. Infection having once occurred, all lesions of cutaneous and mucous surfaces become secondary lesions, which present symptoms corresponding to the stage of the disease. These lesions may be transformed chancres, wounds, gonorrhœal inflammation, flea-bites, etc.

4. Secondary lesions are in various degrees contagious. Those are most highly contagious in which occur secretion, elaboration of pus cells, and discharge.

5. An inoculation of syphilitic or other virus, to be successful, must be followed by the characteristic effects of that virus. Other produced effects do not prove that an inoculation has occurred, since they may proceed from causes connected with the constitution of the individual inoculated. Thus a vaccination of a scrofulous subject may produce a scrofulous sore in no way allied to the vesicles of vaccinia.

These propositions stated, I recur to the body of the article referred to. After a short sketch of the origin and progress of the doctrines of the dualists, Dr. Bumstead formulates them in ten paragraphs, which express fully, with one exception to be again considered, the prevailing views of the school. He then describes the "mixed chancre," and proceeds to the subject of Prof. Boeck's visit to England and America. He says:

"In England, Prof. Boeck succeeded in some seven cases, and in my wards at Blackwell's Island, after a number of failures, he met with success in one instance," in inoculating the secretions of true chancres and syphilitic condylomata, with a view to produce syphilization. In other words, Prof. Boeck *occasionally* succeeded in producing secondary lesions upon the skin of syphilitic patients by irritations with a lancet.

"His method was to inoculate every day, and in some instances twice a day, and he stated that success would be finally attained, though possibly not until after the lapse of several weeks."

This is just what the history of consecutive symptoms would teach us to expect. A period of some weeks generally elapses before the system is capable of expressing its infected condition by the exhibition of secondary lesions. This is that "period of incubation" which Dr. Bumstead himself teaches when he says, in

his work on Venereal Diseases,* (p. 441), "the earliest symptoms of general syphilis . . . have been preceded by a chancre probably between three and certainly within six months." Nor would the coexistence of a primary sore and the results of these so-called inoculations, negative this statement of the essential nature of the latter, since it is well known that the two conditions are frequently observed to be contemporaneous.

An acceptance of the 5th of the propositions stated at the outset of these remarks, involves a complete disbelief in the production of any real inoculation in the cases operated upon by Prof. Boeck, and a different explanation of the modus operandi of his cures by syphilization. The skin is tattoed† with a lancet—no matter what manner of virus is used—until irritated to such an extent as to exhibit the lesions of secondary syphilis. The first explosion of the constitutional disease is thus made to anticipate somewhat the date of its ordinary appearance, and the effect is to delay, or prevent, a further explosion. It is in a similar way that the period of latency of inoculated variola is shortened and its subsequent career modified.

Dr. Bumstead continues by referring to Mr. Henry Lee, of London, who, in 1856, showed that—

"A chancre would become readily auto-inoculable if it was irritated in such a manner as to render its secretion decidedly purulent. This fact was confirmed by Bidenkop, Kobner, and Pick, in Germany, who not only applied powdered savine to the surface of chancres in order to irritate them, as Lee had done, but also accomplished the same purpose by passing a seton of horse-hair through the base of the sore. Similar treatment of syphilitic condylomata had the same effect, and rendered their secretion inoculable, though with greater difficulty."

These conditions are readily explained. But in order to do so satisfactorily, it is necessary to agree, 1st, that contagion is, for all

* The Pathology and Treatment of Venereal Diseases, including the results of recent investigations upon the subject; by Freeman J. Bumstead, M.D. Philadelphia, 1866.

† I use the word advisedly—no other occurs to me equally descriptive of Boeck's procedure. An individual in perfect health could not fail of being profoundly affected by the many hundreds of lancet wounds inflicted in accordance with the Professor's tireless routine.

practical purposes, immediate,* and, 2d, that a chancre is an expression and a result of that contagion; and is as much a constitutional symptom as a syphilitic node.† Such being the case, what is the result of artificial irritation of a chancre by powdered savine, or by a horse-hair seton? I affirm that it is changed, transformed, converted to a syphilitic accident of another grade. It ceases to be a chancre and becomes a syphilide. Mr. Henry Lee elsewhere confesses that he cannot, at all periods of its existence, produce this change in the secretion of the sore.‡ Why? Simply because it is necessary that a certain evolution of the disease should occur before such a transformation can be effected. Observe that syphilitic condylomata exhibited corresponding changes—a fact which clearly indicates the affinities of the two classes of lesions. Now I have endeavored to lay down in the 4th proposition, that the secretion of a pus cell in a secondary lesion is an element of contagion. If all this be granted, can it be said that the auto-inoculation of these secretions produces a true infection, or that the resulting sores are chancres? Is it not rather true that the irritation of the skin of a syphilitic patient, in whom these secondary changes have been induced, provokes the development of additional lesions of the same general character, and from the same constitutional source? It may be admitted, however, that there is, in these instances, an anticipation of the date of the natural explosion of the disease.

Dr. Bumstead concludes from the foregoing experiments that—

1. "Neither the chancre nor any of its secondary manifestations can readily be inoculated with success upon the persons bearing them, nor upon any other persons under the influence of syphilitic infections.

2. "Successful auto-inoculation, however, of these lesions may be attained by irritating them, by the methods just mentioned, so that their secretion is rendered decidedly purulent.

3. "The effect of the successful inoculations is apparently the same as that produced by the inoculation of chancroidal matter. In the course of about forty-eight hours, or without incubation, a

* Cazenave, Traite des Syphilides, p. 142, et seq. Paris, 1843.

† Lancereaux, Sur la Syphilis, p. 63. Paris, 1866.

‡ Lancet, April, 1866.

pustule appears which covers an ulcer with abrupt edges, a soft base, and a tendency to spread; and which will reproduce itself on artificial inoculation through a number of generations."

The first two of these conclusions do not require comment in view of what has preceded. Of the third, I remark, that according to the latest opinions of dermatologists, a pustule is nothing more nor less than a local abscess on a small scale. A pustule, in a subject of syphilis, is a small local abscess, modified by the constitutional dyscrasia. Do we find such modified abscesses in the skin of patients suffering from syphilitic disease? Let Dr. Bumstead himself answer (op. cit. p. 528). "In the superficial variety" (of pustular syphilis—ecthyma, etc.,) "the scab first formed exposes (on removal) a superficial ulceration. In the deep variety, its (the ulcer's) edges are abrupt, and covered with a grayish secretion." And again (p. 527) in describing the pustules of syphilitic impetigo, he says: "Their base is sunken within a prominent border of the same aspect." Squire* describes these same ulcers as being "moderately deep, having . . . clean-cut edges and a grayish floor."

If any one is disposed to doubt whether such secondary lesions could be contemporaneous with some periods of chancrous erosion, I reply that such a doubt cannot fail to be removed by a consideration of the clinical truth of other facts. The division of syphilis into secondary, tertiary and even quaternary periods is entirely artificial and arbitrary, and, as Mauriac† has pointed out, is no more applicable to syphilis, than to any other constitutional disease. This author gives full details of one case, in which, at the very inception of the disease, so-called tertiary complications involved the bones, periosteum, splanchnic viscera and muscles—another of pericranial periostitis at the very outset of syphilis—another of frontal node, occurring only twenty days after chancre, which was *succeeded* by roseala and secondary cutaneous and mucous accidents—and yet another of periostitis, succeeding doubtful primary disease, and *followed* by papulo-squamous syphilide and laryngopathy.

The words "secondary" and "tertiary" are, however, so gener-

* Manual of Diseases of the Skin, by Balmauno Squire, M.D., F.L.S., p. 147. London, 1868.

† Gazette des Hopitaux, 1872. Charles Mauriac, Physician to the Hopital du Midi, Paris.

ally used and understood, that for convenience merely, they are employed in the course of these remarks in the sense according to which they are commonly accepted.

To return to the remarks of Dr. Bumstead, he continues: "... three cases have been reported by Bidenkop as exceptions to this course. In one, an indurated ulcer is said to have been developed after the lapse of two to four weeks; in the other two, papular elevations without induration and becoming only superficially ulcerated, followed after a lapse of four and three weeks respectively; at the same time that pustules appeared from later inoculations, made a few days before, with the same matter and upon the same patients."

These, surely, are the exceptions that prove the rule. No comment is necessary to lead the reader to distinguish clearly, in these results, the influence of a syphilitic infection and its production of secondary lesions.

Now arises the question: What would ensue from an infection of healthy individuals with virus obtained from these sores induced upon the skin of syphilitic subjects—call them secondary lesions, chancres, chancroids, or what you will? If opportunity for such an inoculation were to occur, would you not possess an "experimentum crucis?" To this question the consistent dualist replies: Constitutional syphilis, preceded by infecting chancre, would undoubtedly ensue. Dr. Bumstead, in response, quotes the following cases reported by Bidenkop of Christiania:

"Olive Martinsdalter, seventeen years old, entered the hospital, Oct. 9, 1862, with gonorrhœa of the vagina and urethra. She had recently come from the country, and had never before suffered from any venereal disease. Her health was otherwise perfect. She was treated with alum tampons in the vagina, and a solution of nitrate of silver in the urethra.

"On the 25th of November she inoculated herself on the epigastric region, by means of a needle. The matter was taken from the artificial ulcers of a patient, who was being treated by syphilization, and these ulcers had been produced, many generations back, by the author's inoculation of matter from an infective chancre. She concealed for a week what she had done; but, as the inoculation had succeeded only too well, she was compelled to show it. On examination there was found a round ulcer of the

size of a pea, with sharp edges, sunken floor, and surrounded by a reddish swelling. The secretion of the ulcer was copious, and there was no trace of induration.

"She stated that a pustule had appeared a few days after the inoculation, and had terminated in the ulcer. The latter was treated with a water dressing. It soon increased decidedly in size, and the inflammatory swelling became greater, but without becoming perceptibly indurated. By the end of three weeks it had attained a diameter of rather more than four lines; it was tolerably deep, with callous edges, and its secretion had become scanty and thinner. It was now lightly touched with stick nitrate of silver.

"December 28.—A swollen gland of the size of a walnut, somewhat painful on pressure, appeared in the left axilla, but disappeared again in three weeks.

"January 27, 1863.—The ulcer had decreased to the size of a pin. There was not the slightest infection of the system. In consequence of spontaneous inoculation, a small ulcer now formed by the side of the old one, but soon healed.

"March 5.—The patient was dismissed. The ulcers had healed and left behind them, bluish, somewhat elevated scars, which were not indurated. There was no swelling of the glands, and no symptoms of syphilis.

"The patient was subsequently examined nearly every week by the author, who could not discover the slightest trace of constitutional disease.

"In the summer of 1864, however, she contracted a chancre, which was followed in a few months by roseola and other constitutional symptoms."

The second case, reported by Bidenkop, is thus detailed:

"The patient, a girl free from syphilitic antecedents, had entered the hospital for eczema. She inoculated herself with matter taken, as in the first instance, from patients undergoing treatment by syphilization, who had been successfully inoculated, several generations back, with the secretion of their own chancres. As a result of these inoculations, pustules and ulcers appeared, without incubation, and several of them finally left hardish scars. Some symptoms of a suspicious character afterwards appeared on other parts of the body, but were not regarded as syphilitic by the attending physicians."

Three other cases are aliuded to, which were communicated by Dr. Gjor of Christiania.

Dr. Bumstead admits that these five cases are "imperfectly reported and open to criticism." As the details are not fully given, I remark of the first, hypothetically:

1. The patient may have been admitted with a syphilitic gonorrhœa, from which she became infected, produced an ulcerating syphilide by her so-called inoculation of Nov. 25, and had further accidents develop in 1864—the character of the "chancre" then contracted having been misunderstood. By "syphilitic gonorrhœa," I mean a purulent discharge contracted from an individual infected with constitutional syphilis. Such a discharge (see Proposition 3,) partakes of the nature of secondary lesions in a syphilitic subject, and is capable of transmitting the disease. To this source of infection agree Dr. Bumstead, (op. cit. p. 72), Tonner,* Erichsen, Fournier and others. Forty-seven days, at least, elapsed between the date of admission of this patient and the appearance of the epigastric ulcer; and syphilogrophers agree that but twenty days† may intervene between the date of infection and that of the outbreak of general syphilis.

2. The inoculated region may have exhibited an infecting chancre, and constitutional disease manifested itself as a result in 1864, the character of the sore which appeared in the summer of that year having been misinterpreted. Cazenave is an authority for the statement that the first explosion of the disease after contagion may be delayed for two years,‡ but in this case it is only necessary to suppose a delay of eighteen months. As to the characteristics of the sore produced by the needle, it is noticeable that for one week the patient concealed it from observation. During that period it may have exhibited a pathognomonic induration. This peculiarity of the initial lesion of syphilis often appears on the third day after infection,§ and, to use the phrase of Dr. Bum-

* Practice of Medicine, by Thomas Hawkes Tonner, M.D., F.L.S., p. 294. Philadelphia, 1872. Also, Erichsen's Science and Art of Surgery, p. 524. Philadelphia, 1869.

† Lancereaux, op. cit., p. 64, and many others.

‡ Op. cit.

§ "On Induration in Syphilis," by Victor de Merie, F.R.C.S., Medical Press and Circular, Feb. 16, 1870. Mr. Merie shows in this paper, 1st, that our

stead (op. cit., p. 412), is often "short lived." This would be exceedingly apt to occur in an epigastric chancre, and the rarity of lesions of this character, in such a locality, would render an accurate diagnosis difficult. Of 470 infecting chancres observed at the Hopital du Midi,* one only occurred on the leg and one upon the finger—none on the skin of the body—the field of study therefore in such cases must be limited.

3. On the very showing of Lee, Kobner, and Pick, this epigastric ulcer, situated in a locality extremely favorable for irritation by the clothing, may have been an infecting chancre, whose secretion became copious in consequence of such irritation. The "inflammatory swelling" which subsequently occurred, would point to such a cause. The non-suppurating axillary bubo and the formation of a smaller ulcer in the neighborhood (pustular and encroaching syphilide†) would equally lead to such a conclusion—the roseola of 1864, being, on this hypothesis also, presumed to be a resultant.

Of the second case I remark that the "symptoms of a suspicious character," the "hardish scars," etc., throw so much doubt upon the results of the "inoculation" that any conclusions to be derived from it would prove in a great degree untrustworthy.

Dr. Bumstead continues:

"In 1865, Prof. Pick, taking the matter from pemphigus, acne, scabies and lupus, occurring in persons who had never had syphilis, inoculated it, first, upon the individuals from whom it was taken, without success; but this same matter, inoculated upon syphilitic subjects, gave rise in three instances to pustules not preceded by incubation, and the secretion of which was further inoculated, through many generations. Similar experiments by Reder and Kraus proved successful in one instance."

knowledge as regards the nature of the induration is, as yet, imperfect; 2d, that very striking distinctions exist as to the shape and feel of the induration *according to locality;* 3d, That mistakes are exceedingly likely to occur in distinguishing syphilitic induration from simple œdema and ordinary infiltration. He also demonstrates the *complete absence* of induration in the *irritatory symptoms* of syphilis. Cases are quoted to establish this fact, and exceptional instances are noted where no evident irritatory symptom could be made out.

* Cited by A. Martin, These de Paris, p. 62.

† American Journal of Syphilis and Dermatology, Jan., 1873, p. 58.

Could any stronger proof of the position which I have taken in regard to the secondary character of these induced lesions, be advanced? The very innocuousness of this matter from acne and pemphigus, when introduced into healthy skins, demonstrates that its introduction into the skin of a syphilitic subject, was succeeded by an effect attributable *only* to the syphilitic disease, and proves that the wound of the lancet excited the local disorder. This provocation of secondary lesions is, as the experimenters show, a difficult and rare feat. In four instances only are we informed of its successful accomplishment.

Now if these lesions be not secondary syphilides, and not results of inoculations of a virus, what are they? Will any one contend that they are *non-inoculated* and non-syphilitic chancroids?

Dr. B. continues by referring to the experiments of Mr. Morgan, of Dublin, who has, within a few years, produced "pustules capable of further inoculation through a number of generations, by inoculating syphilitic women with their vaginal secretion."

This also is a result entirely in accordance with facts stated by many authors, to which allusion has been already made. The secretion of a pus cell, either in the vagina or nares of a syphilitic subject, partakes of the character of a contagious secondary lesion, and will inoculate others with the disease, as well as set up an irritation capable of evoking other syphilides in the same subject.

Dr. Bumstead concludes by stating the effect produced on various authorities by the results of the experiments given above. Sigmund and Zeissl remain fixed in the belief of the dualistic school. Reder has "from a scientific standpoint" abandoned its tenets. Auspitz, Hebra, and Michaelis, are in favor of unity. Prof. Pick, of Prague, is non-committal; while Geigel and the great Ricord in France, are enthusiastic advocates of the doctrines of dualism.

Dr. Bumstead's seventh proposition—of the ten in which those doctrines are formulated—is, in part, open to criticism. It reads as follows:

"7. The nearest ganglion in anatomical connection with a chancre almost invariably, and the intervening lymphatics not unfrequently, become indurated at the same time as the chancre itself. If suppuration takes place either in the ganglia or lymphatics, it is due to accidental causes, giving rise to com-

mon inflammation; and the pus is simple pus, destitute of specific quality."

If by this it is meant that the discharge from such a bubo will not inoculate the lips of the opening through which it escapes, and thus give rise to a specific ulcer, as is the case with a bubo originating from a non-infecting sore (chancroid), there can be no question of its accuracy. But if it is meant to teach that there can be any "common inflammation" or "simple pus" in one who is the subject of syphilis, *so far as regards possibility of infecting another*, there is room for dissent. The constitutional dyscrasia in such cases is, without doubt, engrafted upon every morbid process and every morbid product of the system.* It is entirely true, as Dr. Bumstead remarks in conclusion, that "a new field for investigation and experiment has been opened, which no one has as yet fully explored, and no one can pretend to understand." And I am convinced that this investigation can be most satisfactorily conducted, with a complete establishment of the fourth of the propositions stated at the outset of these remarks, viz.: that where there is elaboration of pus cells in a syphilitic subject, there is a possibility of transmitting the disease.

It is not without great diffidence, and a sense of his own unfitness for such a task, that the writer of these lines has attempted to establish the views of an accomplished author, in the face of the facts collected by himself. For the sake of convenience and distinction of statement merely, has the first person been largely employed. It was from the lips of the best syphilographer of America that he learned, some twelve years ago, his first lessons in dualism. And he cannot refrain from comment upon an article which appeared in the *Chicago Medical Examiner* for October, 1871, entitled "The Unity or Duality of the Syphilitic Virus."

After a consideration of several of the results obtained by the German and French experimenters, the author of the article in the *Examiner* concludes with a pointed reference to Ricord, Bassereau and Bumstead. He says:

"The fluctuations of this remarkable controversy are adapted to arouse indignation in a thinking mind. What is the use of science in the hands of men who contrive, not how to bring out

* Aitken's Science and Practice of Medicine; Vol. 1, p. 694. Philadelphia, 1868.

solid and permanent truth, but only some startling conclusions upon which to base a reputation? Who are these pseudo-great men to whom we have given the highest honors of science for forty years, for telling us, first, that the syphilitic virus is single, then that it is undoubtedly double, then again that it is single, and, finally, that they don't know which it is! Would any block-head have done worse by simple guess-work? There is only one remedy for this foolery, and that is, to leave off honoring men for half-made discoveries, and to scourge with the lash of criticism and contempt, all efforts to place crude and ill-sustained opinions in the rank of ascertained truths."

Without attempting to criticise the rhetoric or spirit of this contemptuous "lash," it may be profitable to remind him that "solid and permanent truth" is most often attained by a process of "half-made discoveries." Rarely is it allotted to one man to subtract all the golden ore from its hidden veins. Piece by piece, with much alloy, through arduous labor and by the aid of fellow-workmen, is it brought to the crucible. Columbus never saw the main-land of this continent, but it is inscribed upon his tomb-stone* that he "gave a new world to Castile." Bichat, Hunter, Paget, and Virchow, have been justly honored, though they gave many half-truths to the world, and often much less than that. And were the doctrines of dualism to be to-morrow irrefutably disproved, they who have toiled and studied and written to set them forth, would be chiefly honored for their contribution to the final result.

No. 117 South Clark St.

An Unhealthy Business.—No business is so fatal to life as that of selling liquor, because those who sell usually drink. A recent report in England on the influence of occupation on health, proves that even those who work in mines in the bowels of the earth live longer than liquor sellers. The tables in the report show that while the average number of deaths among 1,000 miners is 18, among 1,000 liquor dealers it is 25, and that the average life of liquor sellers is more than ten years less than that of other men.

* "—a Castilla y a Leon
nuevo mundo dio Colon—"

Selections.

A Case of Traumatic Brachial Neuralgia Treated by Excision of the Cords which go to form the Brachial Plexus. By HENRY B. SANDS, M.D., Surgeon to Bellevue Hospital, and E. C. SEGUIN, M.D., Physician to the Presbyterian Hospital.

We offer the following case, believing it to be unique in its causation, and in the means used to relieve the terrible suffering caused by the nerve lesion.

History of the Case.—E. McA., an American, aged 18 years, was wounded in the following manner, at Worcester, Mass. On the fourth of July, 1871, he was aiding in firing a salute with a brass cannon. While he was ramming home the charge, standing on the right of the piece, his left hand by his side, and his right hand driving in the rammer, the piece was prematurely discharged. He was thrown a considerable distance ("20 feet"?), and lost consciousness. In five minutes consciousness returned, and an examination showed no injury of any part excepting the right upper extremity, which exhibited a badly lacerated wound of the thumb and hand, a fracture of both bones of the forearm in the lower part of its middle third, and an extensive burn of the same part. Patient states in the most positive manner that his hand was absolutely without sensation at the time he regained consciousness, and remained "dead." Very shortly after the accident, the metacarpal bone of the thumb was disarticulated, and as careful a dressing made of the fractured forearm as was allowed by the extensive burn. He was under the care of Dr. Albert Wood.

All apparently went on well until about three weeks after the accident, at which time pain showed itself in the range of distribution of the ulnar nerve of the injured side. In a few days this pain became constant, and assumed an extreme character, extending to the thenar eminence, and affecting the minimus and annulus fingers severely, the medius moderately: the pain was a cutting and tearing one. From that period neuralgia has been the predominant symptom, depriving the patient of rest, exhausting him physically, and quite breaking down his moral tone. Meanwhile, the wound resulting from the amputation of the thumb had partially healed, but no union had taken place between the fractured bones.

On the eleventh of August the patient was brought to this city, and was attended by Dr. Salvatore Caro. Under this gentleman's care, narcotics, morphine, chloral, chloroform, were judiciously administered, but the controlling effect of these drugs was very fugitive; the moment that the patient awoke from artificially produced

sleep, the neuralgic pain in the hand and fingers reappeared with extreme violence, and caused the sufferer to groan and shriek. The wound caused by amputating the thumb rapidly healed, and the burn likewise cicatrized in greater part. From day to day the pain seemed, however, to grow worse, and the patient's strength and moral tone to fail. He became so irritable that the dressing of the wounds was a most difficult matter, inasmuch as he thought movement of the shoulder and arm increased his suffering.

On the 14th of August, Dr. Caro called Dr. Sands in consultation, and the other author of this report was allowed by the courtesy of these gentlemen to take part in the examination. The following memorandum is a copy of notes taken shortly after the consultation by Dr. Seguin.

The patient is a well-built, muscular man, much emaciated. During the examination he exhibits a truly extraordinarily nervous state, which his friends declare is quite unlike his usual manner. The face exhibits the traces of severe suffering and broken sleep. The right upper extremity is the seat of slight œdema. In the lower middle third of the forearm is a false joint, caused by the non-union of the fractured ulna and radius, the ends of which are considerably displaced. Nothing remains of the burn except a granulating surface, perhaps one inch in diameter, on the inner surface of the lower third of the forearm. The amputation at the thumb-joint has left a small healthy oval ulcer. The entire upper extremity is motionless upon a pillow, the elbow and forearm being loosely supported by a simple felt gutter splint. Patient fears that the examination will increase the intense shooting, burning, and tearing pain which affects the fingers and the hand; he dreads contact, active and passive motion. Consequently we are surprised to discover that (*a*) patient can make no voluntary motion of any part of the right upper extremity, except slightly raising the scapula, and that (*b*) sensibility is completely abolished as high as the upper part of the arm. The limit between absolute anæsthesia and sensibility is an irregular line which externally rises as high as the point of insertion of the deltoid muscle, and extends several inches lower upon the inner and posterior aspect of the arm. Above this irregular line of demarcation, about the scapular and clavicular regions, there exists great hyperalgesia, the patient complaining that the pain in the hand is excited by slight contact, and shouting and swearing from extreme agony when the scapula is handled. It is remarkable that bringing the scapula forward and holding it in this position gives the sufferer much relief. As regards the degree of anæsthesia existing below the above specified line,—*i. e.*, in lower part of arm, entire forearm and hand,—it may be stated that simple contact is not perceived; that the fracture may be freely handled without causing pain; that pushing pins deeply into the tissues is unnoticed; and that heated objects are not perceived.

From the patient's assertions about the effects of motion and contact upon the neuralgic pain, the belief had grown up that there might exist a relation between the symptoms of nerve injury and the fracture of the bones of the forearm; in other words, it was feared that the great nerves which pass among the muscles of the forearm to supply the hand were caught between the fractured bones, or were being compressed or irritated by fragments of bone. The question to be decided by the consultants, therefore, was, the desirability of cutting down upon the fracture and determining whether any such pathological state as that above stated really existed. Of course, the discovery of the extensive paralysis and anæsthesia above referred to changed the aspect of the case materially. It was evident that we had to deal with an injury much higher up than the fracture, one producing a complete interruption of centripetal and centrifugal conduction in all the nerve-trunks which supply the upper limb. Of course, this being admitted as probable by all present, the conclusion was arrived at that no operation on the distal side of the injury could relieve the patient of his neuralgia; said neuralgia being a pain referred to the distribution of certain nerves, in accordance with the well-known physiological law of reference of sensations,—a pain whose cause was a nerve-lesion situated in the axillary space, if not higher.

Another consultation (Drs. Caro, Sands, Stephen Rogers, and E. C. Seguin) was held on August 15th, when the question of relieving the suffering of the patient was brought up. Dr. Rogers advised, with the view of interrupting the neuralgia, complete chloroform anæsthesia for a period of twelve hours. Dr. Seguin, considering the neuralgia as dependent upon the irritation of central ends of the injured (ruptured) nerves by newly formed (by repair) connective tissue, recommended counter-irritation to be applied near the supposed seat of nerve lesion, *i. e.*, above and below the clavicle.

On the 28th of August, Drs. F. H. Hamilton and Seguin were asked by Dr. Caro to see the patient. We find him in much the same state, suffering more, if possible; the pain being mainly of a burning character. The patient's excitement and irritability are such that details upon the state of his sensations are very difficult to obtain. The wound in the thumb has completely healed; but the fracture exhibits no signs of union. A careful examination of the state of sensibility shows that anæsthesia is complete in hand, forearm and lower arm as high as limit indicated above. A new test is employed, viz., wire points connected with the maximum secondary current of a strong induction apparatus. Patient's general condition has somewhat improved. The existence of a severe nerve-lesion high in the axillary region (a rupture probably of all the nerves constituting the brachial plexus) being unani-

mously regarded as certain, and the chances of reunion of the torn nerve fibre and the regeneration of the peripheral parts of the nerves being looked upon as *nil*, it was proposed by Dr. Hamilton that the arm should be amputated near the limit of anæsthesia. It was thought, (1st), that through the operation, some temporary alleviation of the neuralgia might be obtained, and, (2d), that the patient would be rid of a member that would ever remain palsied and useless, and the care of which would interfere with the taking of exercise and with other means of regaining tone and strength. The proposal was concurred in; and, on the 29th, Dr. Hamilton dexterously removed the arm at about its middle, by the circular method. Very little blood was lost, and the operation was well borne. An experiment was made by Dr. Seguin upon the amputated arm immediately after its separation. A double-cell faradic battery was in readiness. The three great nerves—median, ulnar, and musculo-spinal—were rapidly laid bare at the upper part of the separated arm. They had lost their normal glistening, opaque appearance, and looked dirty and translucent. To these nerves, properly isolated upon glass, both the weakest and strongest possible currents were applied without producing the slightest muscular contraction in the arm. The median and ulnar nerves were laid bare in the lower third of the forearm, examined in the same manner, and with the same negative result. Neurility, therefore, was abolished in these degenerated nerves, and a positive proof was obtained by this experiment of the correctness of the diagnosis of nerve rupture. Contrarily, the muscles in every part of the extremity were found highly excitable, even feeble currents producing contractions. The interossei muscles, which respond least well, are infiltrated with serum, and are flabby and pale. A hasty examination of the arm showed the tendon of extensor carpi radialis torn across at its upper part; no other muscles are injured. Muscles and tendons on ulnar side, opposite fracture, are covered with plastic exudations. The broken ends of the ulna and radius are not much displaced, but exhibit no trace of an attempt at repair. The nerves are in nowise involved in the fracture. The articular surface of the elbow-joint has lost some of its polish, and appears red.

One of us again saw the patient at the end of September. "I * learned that a degree of temporary relief had followed the removal of the limb. During the rest of the day of the operation, only slight pain was complained of, but on the succeeding days it returned with increasing severity, until, a fortnight later, it was as great as ever, perhaps even worse. Patient has now completely lost self-control; he swears frightfully, throws articles of furniture about, races up and down stairs in a five-story house, because of

* Transcript from Dr. Seguin's memoranda.

the intense burning, tearing and shooting pains, which are referred to the hand and fingers. The worst times are in the afternoon and evening. Patient is then in a terrible state of nervous excitement; he twists and squirms in his bed or chair, chews violently upon a handkerchief, and the perspiration pours from him. His language is interrupted by groans, oaths, and gnashing of teeth. Hypodermic injections of morphia—twenty and forty minims—with chloral, temporarily control pain. The appetite and nutrition have remained fair. Another consultation is proposed to be held between Drs. Caro, Hamilton, and myself. I am prepared to advise the section or resection of the nerves which go to form the right brachial plexus, at a point nearest the intervertebral foramina. The necessity for the performance of such an operation I base upon the diagnosis of injury (rupture) of the brachial plexus in the region where it is bound down to the vessels. I intend to cut the affected nerves above the seat of injury, and thus cause cessation of neuralgia.

The proposed consultation was never held. It was decided to try the controlling influence of a disciplined household upon his mental condition; and he was accordingly sent the next day to the private institution for the insane under the charge of Dr. Barstow. The patient, let it be remembered, was absolutely sane; but it was thought that many of the new surroundings into which he would be thrown might strengthen his self-control and will to modify his expressions of agony.

On the 30th of October a brother of the patient called at my office, and stated that the family desired to place the patient wholly in my care; and he inquired what means, if any, remained, which would give a chance of relief from his great suffering. The operation above referred to was explained to him, and it was agreed that the trial should be made.

On the 2d of November the patient returned to town, and I visited him the same evening. He has changed very much for the better, his color having improved and his weight increased. He no longer cries out or swears because of the pain, but sits in a chair or lies in bed writhing, sweating, and chewing a handkerchief. The stump is of very good shape, and very nearly well. The neuralgia is still terrible, consisting mainly of shooting, tearing pains, together with some burning, and a sense of cramp in hand, all pain being referred to the extremity of missing member. Patient has been most judiciously treated by Dr. Barstow. He has had no morphia or chloroform for a month. He has eaten heartily, and has walked about a good deal.

An examination shows that the stump is sensitive, perhaps more so than is normal; the shoulder is much atrophied, and droops; the scapula is rotated by the action of the serratus magnus muscle. There exists some tenderness over nerves above the clavicle. The

pain is continuous, with exacerbations in the afternoon, and during bad weather. Besides, he complains of his 'hand feeling drawn up,' and of 'sinews working in the arm.' With exception of constipation, no disturbance of any function is present."

November 5th.—The proposed operation is done by Dr. Sands. Present, Drs. Sands, Caro, Geo. A. Peters, Wm. H. Draper, F. N. Otis, T. T. Sabine, John G. Curtis, McCreery, and E. C. Seguin. Drs. Hamilton and Barstow had been invited to attend, but were unable to come. At 10.40 A. M. chloroform was administered, and anæsthesia continued by means of sulphuric ether. An ⅃ shaped incision was made, its long arm extending parallel with the outer border of the right sterno-mastoid muscle, and its shorter arm following the clavicle. The flap was then raised, and the connective tissue, with fibres of the platysma myoides and clavicular portion of sterno-mastoid muscle, divided and turned up. The external jugular vein was turned outward uninjured. Across the exposed triangle a vein larger than the external jugular was met with, apparently in very direct connection with the heart (showing systolic impulse,) and, after being tied with two ligatures, was cut across. A little deeper the nerves were exposed without difficulty. It should be added that the latter steps of this dissection were done without cutting instruments. The connective tissue around the nerves did not separate with normal facility; the nerves constituting the brachial plexus were much matted together, and their dissection was by no means easy; still the first rib was plainly felt at the bottom of the wound, the scaleni were visible, and so was the anterior border of the right trapezius. The fifth, sixth and seventh cervical nerves were cut in a lump, a piece fully a quarter-inch in length being excised; the same being done for a thick double cord, which seemed to represent the eighth cervical and first dorsal nerves. The pieces removed looked badly, and the nerves felt more like tendinous cords than like nerves. The surface of section appeared yellowish, showed hardly any trace of secondary fasciculi; and the neurilemma was unmistakably thickened and injected. More of the nerves, (proximal ends) were taken away, Dr. Sands carrying his knife as near the scaleni as was practicable; but even there the sections exhibited the appearances of neuritis. During the operation no hemorrhage worth naming occurred. The carotid and subclavian arteries were both felt, but the phrenic nerve was not seen. Two or three very small arteries and the above-mentioned vein required ligature. The wound was closed by means of stitches placed a quarter of an inch apart, drainage being allowed at the angle of the wound.

This neuritis was not altogether unlooked-for by us. It may prove to be an inflammation which has ascended from the injured point, and which may be successfully treated afterward. Another possibility is, that the nerves have been cut below the seat of injury, in which case the neuralgia will return and persist.

Patient recovered from anæsthesia with much excitement and delirium; an hypodermic injection of sulphate of morphia (two-thirds of a grain, and one-sixtieth of a grain of atropia) being administered before the ether effects had fairly passed off. After 1 o'clock P. M. he slept three hours. At 6 P. M. he is found rational, and moderately exhausted; pulse 120+, skin moist; has some headache; complains of soreness about shoulder, and of severe numbness in absent right hand, "just as when one's foot is asleep." Is chewing a handkerchief as before operation, though this is perhaps from habit. Ordered broths and a draught composed of dr. ss. bromide of potassium and scr. ij. hydrate of chloral, at 11 P. M.

9th.—A certain degree of pain returned after operation. Is quieted by hypodermic injections of morphia, gr. $\frac{3}{5}$, and atropia, gr. $\frac{1}{60}$. Some surgical fever.

10th.—No change in symptoms; a curious sore has appeared on the left ear. It is a superficial dry eschar, about a quarter of an inch square, on outer border of helix, on a level with tragus. Is this a reflex nervous nutrition disorder? Perspires more on right side than left; right brow wet, left quite dry.

26th.—Marked improvement. Numbness, with much burning, still present. Has taken KI. dr. ss. *per diem*. Has m xv. Magendie's solution of morphia (gr. ss.) at midday, m xx. late at night, under the skin. Wound nearly closed.

Dec. 10.—Gaining. KI. discontinued. Has lately taken quinia sulph. gr. v. twice a day; to be continued. Some dozen small blisters have been applied to various parts of stump and shoulder with benefit. Has had exacerbation in changeable, stormy weather. Cigars have seemed to increase effect of morphia injections.

Jan. 1, 1872.—Last week passed through an attack of pneumonia (left lower lobe); defervescence in less than 48 hours. Neuralgia still severe, but decreasing. More self-control. Continue morphia under skin (m xxv. to xl., in two doses), quinia; and ordered cod-liver oil.

April 1st.—The issue was closed about the middle of March; since has had a succession of blisters applied over stump and chest. Has much improved. Now sleeps in daytime and at night; gives much less expression to pain, although, in bad weather or during a change in the weather, he writhes somewhat, and perspires. The pain is of same character as at time of last note; has much burning; very rarely any tearing or lancinating pain. Hyperæsthesia of skin of stump and chest continues. Fingers are still distinctly felt, and are the seat of most pain; the median and index appear glued together. Has noticed a curious associated sensation; which is, that whenever he squeezes strongly with the left hand he feels as if the absent hand were doing the same

thing. There is much atrophy of muscles about right shoulder. The right pupil is smaller than the left;* and he sweats much more on the right than on the left side. General health is excellent, weight being 148 lbs.—greater than ever before. Receives injections at office, m xvii. to m xx. (according to weather) in the morning (10 A. M.) and m xii. to m xv. about 7 P. M.

May 25th.—Since last note has improved in respect to neuralgia. Owing to the fact that he has not taken cod oil for some time, his weight has decreased some twenty pounds. The pain is nearly always burning; very rarely is there any shooting pain. The absent fingers appear to be in the same position as that detailed above. During the past three weeks he has observed more or less burning pain in cicatrix above clavicle; this pain is becoming daily more noticeable. He has also suffered somewhat from end of the stump. Has regularly received hypodermic injections of morphia night and morning, m xvi. and xv. of Magendie's solution (m xv.=gr. ss.) An examination of the stump and shoulder is made to-day. These parts are very much atrophied, the acromion and coracoid processes being quite prominent. The scapula has rotated outward and upward in such a way that the acromion process is raised, the posterior border of the scapula drawn away from the spinous processes of the vertebræ, and the inferior angle made to approach the axilla. There is no tendency to the "wing" deformity; *i. e.*, the serratus magnus muscle is not paralyzed. This one and the muscles raising the scapula (trapezius and levator anguli scapulæ) are the only muscles of the region which have escaped atrophy. Forced chest-expansion is very good on both sides. There exists a lateral spinal curvature in the lower cervical region (convexity toward the injured side), and another in the opposite direction (compensatory or result of pneumonia?) in the lower dorsal region. The end of the stump is very firm and sound; the cicatrix above the clavicle is also in good condition. State of sensibility.—The patient states that he has an extensive surface on the right side that is abnormally sensitive. Light contact and pinching are felt a little less distinctly on this zone than on the corresponding parts of the left side; the æsthesiometer test reveals no difference between the two sides. Cold is perceived a little more distinctly on the left side than on the right. While light contact and pinching are less acutely felt in *the part touched* on the right side, these same irritations (and any others) start the neuralgia with a severity proportionate to the acuteness of the impression. This falsely hyperæsthetic region has the following limits: The entire stump and shoulder; the scapular region, and a little of the back inside of and below the scapula; the axillary region, and the

* This disparity in the state of the pupils was seen very shortly after the operation, but no note made of it.

pectoral region as low as a point one inch below the nipple; the inner anterior limit is along the right outer edge of the sternum up to the supra-sternal notch, where the limit extends quite to the median line, thence taking an oblique course along the anterior edge of the sterno-mastoid muscle, then a little forward so as to include the angle of the jaw and a part of its ramus and body; from the lobule of the ear the line extends backward and downward to the posterior angle of the scapula. The teeth on the right side have been so sensitive that he has not brushed them for months; nor has he been able to comb his whiskers on the same side. We repeat that this abnormal sensitiveness is not a true one, not in the parts touched or pinched, but that irritation of this zone excites the neuralgic pains, these being of the nature of associated sensations. The pupil on the side of the injury and operation is distinctly smaller than that on the sound side (left). The perspiration is more abundant, and appears more quickly upon the right side than upon the left. During the examination the left axilla was moist, but two or three large drops of sweat trickled down the side from the right.

During the last two months the neuralgia has been much less influenced by changes in the weather. It is decided to try applications of the actual cautery to the shoulder and chest. Choice is made of the platinum-tipped cautery, applied at white heat, and in a superficial way (Brown-Sequard's method). Morphia to be continued.

June 22d.—The cautery was applied in all some five times without producing any noticeable relief. Pain is severe, but patient has some hours of sleep, and others of comparative ease, while taking only m xiii. of Magendie's solution night and morning. Neuralgia presents same character, consisting mainly of burning, referred to fingers. These last seem to be in peculiar position above described. Patient is left for the summer under the supervision of Dr. A. Brayton Ball.

December 1st.—Since last note no marked change has occurred. Patient still suffers from much burning and from some lancinating. This is, as of old, referred to the fingers and hand, being felt slightly and seldom in stump or supra-clavicular cicatrix. Hallucination regarding position of fingers continues same. He thinks that he has had more pain in last two months, but this is to be judged in connection with the fact that the morphia has not been increased; takes m xiii. night and morning. Pupils are still unequal. Right side (same parts) still exhibits false hyperalgesia, less marked. Has lately combed whiskers and cleaned teeth on that side. Still perspires more on right side. Right side of neck and other parts have been irritated, and no epileptiform symptoms produced. General health good.

There are a number of points in this history, which, we believe, require more extended consideration.

1. The pathological anatomy of the nerves involved. At the time of the amputation, portions of the three great nerves of the arm—median, ulnar, and musculo-spiral—were removed within two hours after the separation of the limb, and immersed in a weak solution of chromic acid. Two or three weeks later, transverse sections were made of these nerves, and treated in a way to be subsequently described.

During the operation performed by Dr. Sands, on November 5th, pieces were removed from the cervical nerves and from the dorsal nerve which go to form the brachial plexus. These pieces, varying in size from one-quarter to one-third of an inch in length, were cut off as near the scaleni muscles as it was possible to carry the knife. As related in the history of the case, these fragments and the nerve-trunks from which they were taken looked wholly abnormal. The connective tissue surrounding them was hardened and thickened, the nervous cords no longer appeared pearly-white or glistening, and the surfaces of section showed no trace of secondary fasciculi, and no attempt at breaking up into bundles, as are seen when a normal nerve is cut across. These fragments were also immersed in dilute chromic acid, and when they were hardened, transverse sections were cut from them. These sections, and those from the nerve of the arm, were stained by neutral carmine solution, and the water removed from them by successive washings in alcohol and absolute alcohol. They were then made transparent by being floated upon oil of cloves, and finally mounted in Canada balsam dissolved in chloroform.

Before proceeding to the description of the alterations presented by these sections, it may be well to give a cursory account of the appearance of a normal nerve section prepared by the same (Clarke's) method. In section of a normal sciatic nerve* seen with a power of 65 diameters, every nerve fibre is exhibited as a little circle, within which is a hyaline mass, and in the midst of this mass a red dot placed a little to one side of the centre in most cases. These parts are the axis cylinder as the central dot, the white substance of Schwann or myeline as the hyaline mass, and the membrane of Schwann as the circle or rounded ovoid. These circles (varying a little in diameter) crowded together constitute the secondary nerve bundles or fasciculi, which are so large that most of them are clearly seen by the unaided eye. Between the nerve fibres is an uniting substance which appears faintly striated; and here and there are stronger bands of connective tissue (trabeculæ) which are united with the connective tissue around the fasciculus. This is shown as a thick ring, apparently made up by the aggregation of nearly parallel fibrillæ. Around each secondary fasciculus of a spinal nerve there is such a sheath

* All spinal nerves present essentially the same appearance.

appearing as a ring in transverse sections; and these sheaths are united among themselves by more or less loose connective tissue. In this loose connective tissue run blood-vessels, arteries and veins of various calibre. There are small additional blood-vessels enclosed in the perifascicular sheath and in the delicate tissue which separates the nerve fibres.

a. The changes exhibited by the median, ulnar, and musculospiral nerves. To the naked eye sections of these nerves show traces of secondary fasciculi, although the picture is far inferior to that seen in the normal section. Under a power of 65 diameters the connective tissue around the nerve and that between the secondary fasciculi appears moderately increased in quantity and density. The perifascicular sheaths themselves have lost their definite outlines, and merge more into the connective tissue lying round about them. The sections of blood-vessels seem but little changed, and only a few granular (yellow) bodies are seen in the interfascicular tissue, mainly in the neighborhood of the vessels. The great alteration is in the nerve fibres. In the fasciculi very few distinct circles are to be seen, the mass constituting the fasciculi appearing as a confused design made up of fragments of circles heaped one upon the other. In none of the remaining circles can an axis cylinder be satisfactorily recognized. In such circles as subsist, the hyaline substance within them (myeline) appears more refracting than is usual, and is often concentrically striated. We have here the lesions characteristic of the Wallerian degeneration, *i. e.*, disintegration of the nerve-fibres, with proportionately little change in the framework of the nerves.

b. The sections from the nerves excised on November 5th. These present an altogether different appearance. To the unaided eye they appear like sections of some dense, indistinctly fibrillated tissue, tendon for example. Under a low magnifying power the general sheath of the nerve is seen very much hypertrophied. The secondary fasciculi vary immensely in size and appearance. A few are still rounded, encircled by a distinct sheath, and fairly filled with nerve fibres in better or worse condition. The majority, however, are broken up into innumerable smaller bundles, the separation being effected by the formation of distinct bands of fibrillated connective tissue in the place of the scanty network described as lying between the fibres in a normal section. Between many of these fragmented fasciculi are huge masses of wavy, dense connective tissue, with abnormally large vessels, and with a great quantity of granular pigment deposit. This yellowish pigment lies principally immediately around the blood-vessels, or in the connective tissue near them.

As regards the nerves themselves, it may be stated in general terms that they are in a state of atrophy. In one fasciculus, for example, there are very few fibres which present the circular out-

line, hyaline mass, and eccentric dot characteristic of the normal fibre seen in transverse section. The vast majority are much smaller than usual (appearing of about the same dimension with 300 diameters as normal fibres do with 65); they vary immensely in diameter, and many are represented only by parts of small circles. No masses of embryonic cells are seen in any part of the preparations.

To resume: The nerves in the upper cervical region present the lesions characteristic of chronic neuritis, viz., much increase and condensation of the framework, with comparatively minor change in the nerve fibres. In other words, the pathological process in these nerves has been primarily hyperplastic, and the nerve atrophy secondary and incomplete; whereas, in the nerves removed from below the axillary space, the nerve atrophy was complete and primary, the changes in the framework very slight. In one case we have the lesions of chronic hyperplastic neuritis; in the other, those of the Wallerian degeneration.

2. Nature and seat of the injury to the nerves.

The absolute anæsthesia of nearly the whole arm exhibited by the patient previous to its removal, and which probably existed immediately after the infliction of the injury, points to a complete solution of continuity in all the nerves which supply the lower arm, forearm, and hand with sensory filaments.* Further, the patient had complete paralysis of muscles situated far above the limit of anæsthesia, those which act upon the upper part of the humerus and some of those moving the scapula. The distribution of motor palsy and of anæsthesia in this case fully illustrated van der Kolk's law of distribution of sensory and motor filaments of one nerve-trunk, viz., that the former are sent to parts which are moved by muscles innervated by the latter.† We therefore had ample clinical reasons for localizing the injury at least as high as those parts of the brachial plexus which lie behind and just above the clavicle, and also for considering that the injury consisted in a complete disruption of the nerve-trunks. Another possibility presented itself to our minds, viz., the tearing out of the roots of the nerves which constitute the brachial plexus, from their attachment to the anterior and posterior aspects of the spinal cord. Such an accident has been placed on record by Flaubert,‡ occurring as a consequence of forced extension made to reduce an old dislocation; but in this case the patient died in a few days with symptoms

* Compare Mitchell, Injuries of Nerves, p. 227. Philadelphia, 1872.

† Schroeder van der Kolk. On the Minute Structure and Functions of the Spinal Cord and Medulla Oblongata. Translated by the New Sydenham Society. Vol. iv., 1859, pp. 8, 9.

‡ Repertoire General d'Anatomie et de Physiologie Pathologique. Vol. iii., p. 55. Cited by Le Bret, mem. de la Soc. de Biologie. 1853.

of spinal cord inflammation, corroborated by the autopsy. Guided by the result of this case, and by the fact that our patient had at no time presented any symptom of spinal meningitis or myelitis, we felt reasonably certain that the nerve-roots in his case had not been torn out. Having thus excluded intra-spinal rupture, and determined with certainty the lowest possible limit of the injury, the question arose, whether we could arrive at a still more exact knowledge of the seat of nerve rupture; where in this tract between the intervertebral foramina giving issue to the fifth, sixth, seventh, eighth cervical, and to the first dorsal nerves, and the upper limit of the axillary space, was the laceration most likely to have taken place? It appeared to us impossible to make a satisfactory answer to this question. The microscopical examination of the nerves corroborated the diagnosis reached upon clinical grounds, since the sections taken from the upper part of the cervical nerves showed neuritis, while those cut from nerves below the axilla exhibited the changes of descending or Wallerian degeneration. It is therefore right to conclude that the excision has been made as intended, above the seat of laceration.

In this connection it may not be amiss to recall the exact mechanism of the accident. The patient's right hand was firmly clasping the rammer, and all the muscles of the arm were in activity during the effort of ramming home the charge. The explosion naturally drove the hand forward and outward with incredible violence, the arm following the same direction, and being for the moment in a state of extremely violent extension. So enormous was the strain upon this limb that the patient was projected bodily many feet. We see no reason for not admitting that the fracture of the bones of the forearm occurred at the beginning of this movement of extension. This being granted, it follows that a great strain was put upon the soft parts which still connected the lower part of the forearm with the upper, and that the blood-vessels and nerves were greatly elongated. During this elongation the nerves gave way at their weakest point, *i. e.*, where they are most firmly bound down, and where they interlace and anastomose —behind the clavicle.

Besides Flaubert's case above referred to, we have met with quite a number of instances of obscure nerve injury, caused by the reduction of old shoulder dislocations, but the details given are so meagre as to make the cases quite useless. An exception to this statement is the case recorded by Le Bret.* A young soldier, who had dislocated his right shoulder, underwent the operation of reduction on the same day. The traction was done by men pulling upon a sheet firmly tied around the arm just above the elbow. Immediately after the reduction, without any special pain having been felt, the patient noticed that his arm and forearm were paralyzed.

* Memoires de la Soc. de Biologie de Paris, 1853, p. 119.

When seen by Le Bret, five months later, there existed complete anæsthesia below the bend of the elbow, besides palsy of the arm. The corresponding side of the neck had lost motion, and was anæsthetic; the right upper eyelid covered the globe, and vision was impaired; the right iris was slightly contracted. There were some lancinating pains in fingers and arm. The nerves (inner aspect of arm, and above clavicle) were tender to pressure. Some improvement took place in motion of arm and neck, and the ptosis was cured. The author believes that the nerves were torn across in the region of the brachial plexus.

3. The demonstration of persistent muscular irritability at a considerable period after the muscles had ceased receiving nervous influence.

The arm was removed eight weeks after the reception of the injury, and, as related above, while no muscular contractions could be obtained by faradizing the nervous trunks at various points, almost normal movements were produced by the direct application of the current to the muscles themselves, even those (interossei) which had apparently suffered much in their nutrition. The bearing of this experiment upon the question of the independence of muscular irritability might detain us awhile, were it not that this paper has already reached a considerable length. Let it suffice to state that this result agrees with that obtained in the inferior animals. The fact that functional capacity survives in muscles for a period six or twelve times longer* than in nerves, in cases where those organs have been cut off from communication with the spinal cord, has been demonstrated by a great number of physiologists. Among the earlier of these we may name Marshall Hall, J. Muller, Gunther and Schon; the latter fixing the date of loss of excitability in nerve-trunks at eight days after section. Later experiments by Longet, Schiff, Landry, Vulpian, and many others have resulted in positively limiting the time at four days. On the other hand, these observers agree in stating that muscles retain for much longer period the power of reacting under immediate stimuli. Some of Longet's† conclusions on this point are worth reproducing:

"1. In mammals, a motor nerve, when separated from the cerebro-spinal axis, loses all excitability after the fourth day. At that time the application of mechanical, chemical and electrical irritants to any part of the distal end of the nerves is followed by no muscular contraction.

* Dr. Brown-Sequard asserts that there is sometimes no diminution of muscular irritability: he has found it as great as in the normal state 19 months after the whole central end of the facial nerve has been drawn out from its exit at the stylo-mastoid foramen. Bulletin de la Societe Philomathique, 1847, p. 83.

† Traite de Physiologie, t. ii., p. 619. Paris, 1869.

"2. Contrarily, a muscle whose motor nerve is no longer excitable, will, even after the lapse of twelve or more weeks, respond perfectly to any direct stimulus."

Landry,* however, states that in the human species, muscular irritability under these circumstances is abolished in the seventh week. The almost perfect response of the muscles to stimuli in our case, and their apparently normal structure at the end of eight weeks, completely overthrows Landry's conclusion. The causes of error in the author's observations lay, 1st, in the fact that he was unable to apply the electric current directly to the muscles, although he made use of electro-puncture; and that, 2d, in all likelihood there existed in his cases more or less active impairment of nutrition in the paralyzed muscles, owing to irritation of the nerves at their origin.

Vulpian† rightly insists upon the value of the fact observed by him in animals, that muscles deprived of innervation which do not contract when the electric (faradic?) current is made to pass through the moistened skin, do so fairly when the electrodes are placed immediately upon the muscular substance; and he goes on to throw doubt upon the observations made by clinicians in regard to the early (fourth—eighth days) loss of electro-muscular contractility in certain palsies—the "rheumatic" paralysis of the face, for example. It is to be regretted that in our case the patient's great suffering deterred us from faradizing the muscles of the arm before its amputation.‡ As it stands, our observation is in favor of a prolongation of muscular irritability in man after nerve section for a period quite as long as that determined in the lower animals.

4. Some of the symptoms appear to us especially interesting.

(*a*) In the first place, there are signs pointing to a paresis of the vaso-motor nerves on one side of the face, neck, and chest. The right pupil was noted as smaller than the left immediately after the operation, and from an early period the patient perspired much more upon the right side than the left. Besides, there was a peculiar condition of sensibility on a large extent of the right side of the body. At one period this is spoken of as hyperalgesia; but a later examination showed that there was no abnormal tenderness in the part touched, and that the pain produced by contact was felt in the absent arm and hand. Still, it should be borne in mind that the patient's self-control and estimation of the nature of his sensations were not always normal, so that it cannot be asserted that there did not exist, at an early period, true hyperalgesia. The æsthesiometer certainly taught us nothing. The extensive surface, falsely sensitive, bore the same relation to the

* Traite complet des Paralysies, t. i., pp. 40, 41. Paris, 1859.

† Lecons sur la Physiologie der Systeme Nerveux, p. 245. Paris, 1866.

‡ Through causes beyond our control, the galvanic current could not be applied to the nerves and muscles in the above-detailed experiment.

brachialgia that many "tender points" do to ordinary neuralgia. An impression transmitted to the spinal cord, at a point near the portion which gives origin to the nerves supplying the region affected with neuralgia, causes action of the sensory tract connected with these nerves, and consequently produces a *referred* sensation of pain. One of us* had occasion to observe a curious example of this *associated painful sensation* in his own person, last summer. A lower incisor tooth had become the seat of tartar deposit, and the gum below was shrunken, red, and tender to the brush. There had never been toothache. One day a small pimple appeared on a level with the upper margin of the thyroid cartilage on the same (right) side as the unhealthy gum; and during the entire period of growth and maturity of the pimple, pressure (even light) upon it produced an acute pain in the gum around the above-mentioned tooth. The experiment was repeated scores of times; and it was further observed that touching the gum did not produce pain in the pimple. Here an impression made upon a branch of the superficial cervical plexus, transmitted to the sensory tract of the upper cervical cord and medulla oblongata, excited in the latter action of the cells connected with the third branch of the trigeminus.

(*b*) The disturbance of nutrition, which produced a slough upon the left helix, is difficult of explanation. It is well to remember in this connection that Brown-Sequard produces gangrene of the edges of the external ear, at will, in guinea-pigs, by injuring the medulla oblongata.

(*c*) The burning pain (causalgia of Mitchell) did not appear immediately after the injury; this being in accordance with the rule laid down† by the distinguished author just named. As regards the date of the appearance of this peculiar pain, we can obtain no definite information.

The expressions of agony, in action and words, employed by our patient corresponded singularly with those recorded by Dr. Mitchell in his works upon nerve injury.‡

With reference to the extraordinary severity and persistence of burning pain in cases of injury to nerves, we would recall the fact first distinctly stated by Cruveilhier,§ that loss of the power of perceiving thermal impressions occurs later than the loss of various other varieties of sensibility, and indicates absolute anæsthesia; and we suggest that inasmuch as the thermal sense is the last to disappear in gradual diminution of sensibility, so in a neuralgia caused by irritation of nerve-trunks, this most deeply rooted, or

* Dr. Seguin.

† Mitchell. Injuries of Nerves, and their Consequences, p. 197. Phila., 1872.

‡ Compare also, Mitchell, Morehouse, and Keen. Gun-Shot Wounds and other Injuries of Nerves. Philadelphia, 1864.

§ Anatomie Pathologique, liv. xxxviii., p. 9.

most fundamental mode of sensation is most affected, and burning is felt acutely when common pain and formication have almost or quite ceased. It is well known that extreme irritation of the skin, after producing ordinary pain, causes intense burning; an event frequently met with in surgical practice; and, moreover, the contact of extremely cold bodies with the skin sets up a painful sense of heat.

5. The operation above described is believed to be the only one of its kind ever attempted. Excision or division of the spinal nerves has generally been performed on the smaller branches; and, excepting the case herewith related, has never involved the primary trunks near their points of exit from the spinal canal. Neurotomy, when undertaken for neuralgia of traumatic origin, has, in a great many instances, effected a permanent cure, and in these cases is far more likely to prove successful than when it is performed for the idiopathic forms of the disease. If the nerve-tissue is healthy at the point of section, the operation can hardly fail; yet success has followed the operation in not a few cases where the divided nerve was thickened and inflamed. In the lower extremity, excision of the smaller nerves has repeatedy been performed, and in several instances the great sciatic has been either excised or divided. Dr. Mitchell* reports a case in which Dr. Nott excised an inch and a quarter of the great sciatic nerve, close to its point of exit from the pelvis, for traumatic neuralgia, caused by a gunshot wound of the leg. Amputation of the leg, reamputation of the stump, excision of the sciatic nerve in the popliteal space, and amputation of the thigh, had already been performed in succession without avail. Partial relief is stated to have followed the final operation performed by Dr. Nott.

Other cases of division of the great sciatic nerve are recorded by Malagodi, Mayor, Nelaton, and Jobert de Lamballe. In Jobert's case the operation was performed for sciatica. Pain ceased at once, but death occurred six months subsequently from paralysis and bed-sore.

In the upper extremity, excision of the median and several other branches of the brachial plexus has often been practiced, and with various results.† In some cases the operation has effected a complete and permanent cure; while in others it has afforded no benefit. Several years ago one of the authors‡ treated a patient in Bellevue Hospital who suffered from violent neuralgia and chorea, caused apparently by a neuroma which had formed upon the face of a stump after amputation of the arm near the shoulder-joint. The neuroma was laid bare by dissection, and was found

* S. Weir Mitchell, op. cit., pp. 285, 286.

† Schmidt's Jahrbucher; Bd. cxxxv., p. 220; cxxii., p. 218; Bd. cxiii., p. 298 *et seq.*

‡ Dr. Sands.

to be connected with all the descending cords of the brachial, excepting the circumflex. These were pulled downward, and, together with the axillary vessels, divided at about an inch above their seat of attachment to the neuromatous swelling. The neuralgia was relieved by the operation while the patient remained under observation, but the choreic symptoms persisted. He left the hospital about two months after the operation.

In the case which forms the subject of this article, the operation of excision of the spinal nerves was undertaken partly as a last resort, and partly because it was thought that the danger of performing it would be considerably reduced, in consequence of the previous removal of the arm by amputation. It is interesting to observe, however, that no serious nutritional changes, except those affecting the muscles, took place in the parts supplied by the divided nerve-trunks.

Another point of interest is the practicability of the operation, when considered merely with reference to the difficulty and danger attending its execution. Under ordinary circumstances, supposing the nerves to be healthy near the points of section, the operation would cause no embarrassment to a skillful surgeon, and all the cords of the plexus might be exposed and divided without dangerous interference with the neighboring bloodvessels. But, even in the present cese, where the nerve-trunks were pretty firmly adherent to the surrounding tissues, their isolation was satisfactorily accomplished by careful dissection; and the wound made by the operation healed readily, without profuse suppuration.

Examination of the nerves excised led to the unsatisfactory conclusion that they were diseased above the line of section; and it is not easy to understand, on anatomical grounds, why any benefit should have followed the operation. The nerve-trunks, however, were divided pretty close to the intervertebral foramina; and, if it be assumed that the cause of pain resided in their proximal ends, it is not improbable that the tension of the latter may have been diminished, and their relations otherwise favorably altered as a consequence of the handling to which they were subjected previously to their division. Such an explanation seems plausible, from the results that attended an operation recently performed by Professor von Nussbaum. It may also be supposed that a cutting off of a considerable portion of irritated nerve-trunk from communication with the spinal cord diminished the neuralgia, by reducing the total amount of irritation transmitted to the nervous centre.

We may sum up the case by stating that a neuralgia of a class known to resist all ordinary treatment was much relieved by an operation not dangerous in itself. We did not obtain radical success, because we failed to find healthy nerve-trunks at the place of section. The diagnosis of the seat of injury was correct enough, but the ascending neuritis baffled us.

We are indebted to Dr. Caro for a statement of the case as it appeared to him, but as his letter contains nothing that is not recorded in the above history, we take the liberty of omitting it.—*Archives of Scientific and Practical Medicine.*

Case of Facial Paralysis. By Gouverneur M. Smith, M.D. (Read before the New York Academy of Medicine, June 5, 1873.)

The brief recital of a case of Bell's paralysis, which has recently come under my care, may prove of interest, as the method of treatment adopted tends to show the correctness of views originally presented to this Academy a short time since by one of its distinguished fellows.

On the 5th of April last, a patient came under my care, suffering with paralysis of the left side of the face. The patient was a gentleman of culture and means, about sixty years of age. Residing for a large part of the year at his country-seat, on the Hudson, and spending much of the time in the open air, he was ordinarily in the enjoyment of excellent health, and manifested his robust condition by a commanding appearance. The occurrence of such local palsy was the occasion of no little solicitude in the mind of the patient, lest it be precursory of a hemiplegic seizure.

In studying the etiology of the malady, it seemed probable that the disorder had been excited by cold, to which the patient had been exposed while riding in the Central Park on the day previous to the one upon which the paralysis was fairly developed. There was no evidence of centric disturbance; peripheral lesion was not marked by any decided local point of irritation.

In speaking of peripheral facial hemiplegia, Aitken remarks: "Although it is not a dangerous form of paralysis, it is one from which recovery is very slow, and in which prognosis, as to complete recovery of symmetry of the face, is uncertain;" and also says, "from four to ten months is the ordinary duration of the affection; but there are instances in which the paralysis yields in twenty-four, fifteen, or even twelve hours, but such cases are exceptional" (Trousseau).

After regulating the bowels of my patient, he was placed under the use of iodide of potassium, and on four occasions electrization by a specialist was applied to the affected side. No counter-irritation behind the ear was resorted to, owing to the absence of apparent local lesion. On the 21st of April the patient had shown little or no improvement. I remembered that Dr. William Detmold had read a paper before this Academy (March 20, 1873,)

entitled "Facial Paralysis treated by a New Method." Not having been present at the reading of the paper, I called upon Dr. Detmold, and he briefly gave me the views he had here expressed, and as since published in the *New York Medical Journal*, May, 1873.

In the case which he has reported he says: "I determined to try what mechanical means would do. I bent a wire into a hook, which I put into the drooping corner of the mouth, and drawing it up, bent the wire over and behind the ear. I recommended the patient to keep it on over night, trusting that, by entirely relaxing the paralyzed muscles, and supporting the dragging weight, I might somewhat relieve the defect." Prompt amelioration followed this method of treatment. Dr. Detmold further says: "It then occurred to me that I might make this instrument still more effective, if I could combine with it a permanent and continuous galvanic current through the paralyzed parts, by having it made of two different metals, thus forming as it were a single cell of a galvanic battery." An instrument fulfilling such purpose was made by Mr. Chester under Dr. Detmold's direction, and the patient at the time of the report was steadily improving. The case had been a chronic one, of sixteen years' duration, and had not before been relieved. In his conclusion Dr. Detmold remarks: "I am unable to say what share in the benefit, or whether any, is due to the galvanic current, to which, on the whole, I do not attach as much importance as to the mechanical support."

Resolving to test the applicability of this method of treatment to the acute case under my care, I procured from Mr. Stohmann a German-silver wire mouth-piece, used by the dentists in holding the mouth open during dental operations. The dentists employ two, one on each side. One of these I bent in such a manner that it would not keep the mouth open, but simply act as a hook comfortably catching the corner of the mouth, and to the outer end fastened a piece of copper wire, which, passing across the cheek, was turned around the ear. The wire passing over the ear being covered with a soft material, was not a source of irritation. As the cheek was quite pendulous, I ordered a bandage to be passed around the head under the jaw, to give additional support.

The relief which followed was significant, for, after using this appliance for two nights, decided amelioration was manifest. Wishing the patient to avail himself of any advantage that might be derived from the galvanic current, I went with him to Mr. Charles T. Chester's, 104 Centre Street, and, giving a wire model as to size, Mr. Chester had prepared this neat instrument, which is a fac simile in principle of the one made under Dr. Detmold's direction. The smooth and easily fitting hook or mouth-piece is made of platinum; the wire running across the cheek and turning

behind the ear is of silver, and to this is adapted a zinc plate, which is covered with velvet, with the view of readily retaining the moisture of either saline, acidulated, or pure water.

The patient on procuring this instrument substituted it for the one I had extemporized, using it at night; convalesence was rapid. Recovery from the facial paralysis was complete in about a month from the time of its incipiency. There has been no recurrence of the difficulty; the symmetry of the face is normal.

Several questions naturally arise in this connection. In the first place, was this case one of those occasionally met with, in which recovery takes place without material artificial assistance? and, in the second place, if recovery is due to treatment, how far was it attributable to the mechanical means, and how far to galvanism? In response I would say that, there was scarcely any perceptible improvement in the patient until the "mechanical means" were resorted to; convalescence seemed to date from the night they were employed.

Whether or not the second instrument was a more potent remedial factor, by its galvanic properties, it is difficult to say. The patient was not conscious of any galvanic influence, though there is no question of the passage of a current through the affected side, by means of this appliance, but, as stated in Dr. Detmold's paper, from the periphery to the centre. In regard to the action of this instrument, Mr. Chester has written to me as follows: "I have tested the little galvanic battery, made to apply to the face of Mr. ——, in a general way. The covering of the zinc plate, being moistened with water, made a good conductor by the addition of a slight trace of acid, and the plate then applied to (behind) the ear, while the platinum end was inserted in the mouth, I find that it generates a steady current capable of deflecting a galvanometer or sending a telegraph message easily through seventy-five miles of the ordinary telegraph wire."

This case, so far as I am aware, is the first acute one treated by the method suggested by the distinguished fellow to whom allusion has been made.—*New York Medical Journal.*

The Certificates of Family Physicians. By William C. Wey, M.D., Elmira, N. Y.

An engagement between a physician and his patient, in its mutual obligations, is as binding, morally and legally, as any other implied contract, and the failure of either party to perform makes him liable for the consequences of his dereliction. In this respect the profession of medicine possesses no advantages over the trades or the ordinary commercial relations of society. Estimated by

such a standard, medicine, while advanced to the dignity of a profession, is surrounded by and made subservient to the laws and usages which govern the arts and crafts, and is equally amenable to judicial review, discipline and punishment. Unlike the arts and crafts, however, medicine is obedient to a law within itself, which may or may not find expression in a code of carefully-framed rules. Long before a written code of ethics found favor in the profession, which is a very modern suggestion, a sense of personal or individual honor among physicians served to keep inviolate the nature and terms of the engagement or contract between them and their patrons. The force and character of this agreement, though not strengthened by a written code, simply finds amplification in its precepts and declarations.

In a better, in one sense, though not in a more scientific or learned age, when a higher standard of honor prevailed, a written code was not required. Ignorance of professional ethics could not be accepted in extenuation of their violation. In a looser period, with cheapened education, and, as a consequence, diminished honor and responsibility, a code of rules became necessary for the purpose of keeping the ranks in the profession informed and educated up to the standard of accountability current among the wiser and more loyal members of the brotherhood. In these days, as in former days, with or without a written code, a few lead the way, and the many follow or disregard the call, as they are impelled by education, habit, policy, or some other motive.

I am led to consider this subject in connection with the question—"Ought a family physician to grant a certificate in case of application for life insurance?"

I have no hesitation in asserting that it is no part of his duty to furnish information to a life insurance company in respect to the health of individuals who may have placed themselves under his professional care. Not only is it no part of his duty as a medical man, but it is virtually a betrayal of the trust and confidence imposed in unreserved relations between patient and physician.

Even with knowledge that the person to be insured is, and always has been, in such absolute health as to make reply to the questions asked on such an occasion a mere matter of form, and an endorsement of his physical and mental state, like endorsement of his credit or character, it is quite as much a professional act and service as if the physician's statement raised a doubt in respect to the integrity of the applicant's pulmonary or psychological functions.

If it is a friendly office purely, it carries professional significance along with it, thereby violating obligation on the one hand under cover of a personal favor, and communicating valuable information to a life insurance company on the other.

If the certificate is given for a fee, paid indifferently by the party seeking to be insured or by the company, it suggests an imputation that a moneyed compensation may influence the judgment to be rendered. This objection, in view of the paltry sum usually paid by an insurance company, is scarcely worthy of consideration. In the former case, it may be well to observe that an opportunity is offered an unscrupulous applicant and an equally unscrupulous "family physician" to combine, and for a purpose to produce a certificate, which shall reveal a standard of health upon which a policy of insurance will be sure to follow. If a physician, occupying the position of medical examiner for a highly reputable life insurance company, can be found so culpable and criminal as to recommend a consumptive, in the last stages of disease, as a first-class risk, on whose life a policy is issued, it is not difficult to conceive of collusion between an applicant and a family physician, prompted by motives equally offensive and condemning.

It is exceedingly disagreeable to dwell on this feature of the subject, as evidencing loose morals in the profession. An ideal standard of medicine takes no cognizance of such illustrations of baseness. Every-day practical experience with the profession as it is, and not as it should be, or indeed as it would be if raised to an even or uniform basis by education, has forced upon us the unwelcome conviction that, in spite of codes and journals and books and teaching from an endless variety of sources, the *average* men in our ranks are not above suspicion of being governed by selfish and mercenary motives.

The opinion of a reliable family physician, far beyond the recommendation of a medical examiner, carries weight with a life insurance company. Hence the importance of obtaining his approval of a risk. Paradoxical as it may appear, the physician knows the applicant, the corporeal applicant, more intimately than he knows himself. In the undisguised character of patient, his physical, mental and moral attributes have been clearly revealed to his attendant. Nothing has been withheld, simply for the reason that to keep back information would limit the ability of the physician to render prompt and efficient aid and service.

Considering the confidential relations thus engendered and the value of the information acquired by the physician, the usual questions asked in this connection by a life insurance company—"Have you been in the habit of seeing him frequently? Have you given him medical attendance? If so, for what diseases?"—must appear like an attempt harshly to invade the precincts of the sick-room, and cause the medical attendant to betray the interests of those who have implicitly confided in his truth and honor.

The questions above given cover the whole ground of a physician's intimate intercourse with his patient, laying bare his responsible and guilty acts as well as the infirmities for which he is not accountable.

Surely it is not the object of life insurance companies to seek to compromise the office of family physician, or to invite, or for compensation to engage him to do violence to his scruples and convictions. The custom of requiring a family physician's certificate in application for life insurance was established as a matter of business, without considering the nature of his engagement to his patient or the extraordinary demand which it exacted.

It is remarkable that a common professional sentiment did not, long ago, protest against such an attempt to procure information, on the ground, already mentioned, of infraction of ethics, and disregard of individual obligation and propriety. That a more correct estimate of this question is current in the profession I am disposed to believe, from pretty large observation among my colleagues, and from the more general extension of life insurance interests in every city, village and hamlet in the State. The subject is thus brought directly to the attention of medical men, and they are compelled to give it more than usual scrutiny—such scrutiny as embraces the delicate nature of the duties of the family physician in a specific as well as in a more enlarged and comprehensive field.—*Med. Record.*

ARTICLE VII.—*Notes of an Interview with Brown, the "Mind-Reader."* By HENRY M. LYMAN, M.D., Prof. of Chemistry, Rush Medical College, Chicago.*

At 5 o'clock P. M., August 13, 1873, a small party of physicians, clergymen, and gentlemen interested in scientific studies, were assembled by invitation of the pastor, Rev. C. D. Helmer, in the parlors of the Union Park Church in this city, to meet the young gentleman whose peculiar endowments are attracting considerable attention at the present time. He soon appeared, with his mentor, Mr. Kelley, and proceeded at once to business.

Mr. Brown is a young man, twenty-one years of age; about five feet eight inches tall; would weigh not far from one hundred and twenty pounds; has dark hair, eyes and complexion; has a frank, open countenance; his manner is quick and alert; but there is about him nothing which would suggest the possession of any unusual endowment. His education has been that of a country boy in the public schools, and his occupation is that of a machin-

* Received too late for insertion in its proper place.

ist. His companion, Mr. Kelley, an elderly gentleman, well and favorably known by some of the residents of this city, stated that from infancy Mr. Brown's mother considered him a strange child, rather peculiar in his ways; but it was only eight years ago that his singular nervous susceptibilities were discovered. At that time, while wrestling one day with another boy, his opponent happened to brush the back of his left hand across his forehead. Instantly flashes of light seemed to radiate from his head. A repetition of the conditions was followed in every instance by the same result. This arrested his attention, and led him to experiment in various ways relative to the effects of physical contact with other persons, until he arrived at the discovery that if, when his eyes were closed, the back of the left hand of another were pressed against his forehead, his movements were subjected to the guidance of that person's will as long as such contact was maintained. To secure this subordination, the left hand must be used; and the limb must be a perfect member: arms that had ever been broken or seriously injured would not answer the purpose. Nor could this peculiar guidance be exercised by any one at all under the influence of liquor.

Having thus introduced his protege, Mr. Kelley stated that if any one of the party would conceal something, anywhere he pleased, Mr. Brown would conduct him to the spot. I therefore placed my lancet-case upon the projection of the middle hinge of a door on the right side of the lobby of the church, and returning to the parlor I determined to fix my thoughts, while being led by Mr. B., in the first place upon the white door-knob of the parlor door, then upon the knob of an opposite door, then upon the left-hand extremity of the lowest step of the stairs on the left side of the lobby, and finally upon the location of the lancet-case. I then gave my left hand to Mr. Brown who had been carefully blindfolded. Requesting me to keep my arm fully extended, and grasping my left hand with his left hand, he placed the palm of his right hand for nearly a minute upon my forehead. At the first instant of contact his muscles were tranquil, but almost immediately his hand began to tremble, and to tremble more violently the longer the contact was maintained. Having thus touched my forehead, he placed the palm of his right hand upon his own forehead for about ten seconds, and then quickly applied the back of

my left hand to the same place. He at once began to move; and concentrating my thoughts as rapidly as possible upon the path which I had previously marked out in my own mind, I found myself speedily dragged along to the parlor door, where Mr. B. bowed his head to the white door-knob. Then raising himself he began to move towards the other door before I fairly knew what he was about. After taking two or three steps in that direction he seemed to waver, and being now recovered from the mental confusion incident upon surprise, I concentrated my thoughts upon the stairs, and was immediately led to the left-hand extremity of the lowest step of the stair in the lobby. Here he stopped, and seeming inclined to bend his body downwards, I mentally addressed him the words, "Down! down! down there!" He immediately bowed his head till the forehead almost touched the step, and said, "It is there;" at the same time letting go my hand. We had not traversed the last stage of the route which I had planned, but it was evident that as long as physical contact was preserved, the direction of the course of his movements was largely under the control of my own will.

Returning to the parlor from which we had started, Dr. I. N. Danforth concealed his knife in a hymn-book which was placed upon a pile of books in an adjoining room, and then gave his hand to Mr. Brown. After perfecting the contact by the usual manipulations, he started with the doctor upon a long and devious chase all around the interior of the building, but finally led him to the book which contained his knife. Dr. D. is a small man with sandy hair, a slender frame, and a nervous-sanguine temperament; and having failed in his intention to direct Mr. Brown by the *shortest possible course* to his knife, we decided to repeat this experiment with a person of different temperament,—Dr. C. W. Earle, a large and powerful man, with dark hair and complexion.

Dr. Earle suspended his watch in a closet, and then surrendered his hand to Mr. B. who led him a wilder goose chase than he had led Dr. Danforth. After dragging him up stairs and all over the audience-room of the church, Mr. Brown gave up the search, saying that he must rest. He stated that if overheated his power was greatly diminished, and that it was greater in cool weather than in hot. While resting we ascertained that his temperature was 98½° F.; pulse normal. Temperature of the atmosphere 75°

F. Dr. Earle stated that during the experiment he had concentrated his thoughts upon the watch itself rather than upon the place of its concealment. Cautioning him to converge his attention upon the locality, Mr. Brown resumed the experiment, and immediately dragged the doctor at top speed to the place where his watch was hanging. During the time of his rest he had no communication with any one who knew where the article had been hidden.

The rapidity and certainty of his movements during these experiments were remarkable. His gait was almost a run; and he steered clear of every obstacle with the precision of ordinary eyesight. This, so long as his companion used his own eyes. We therefore proceeded to vary the experiment. Having arranged the blinder, one of our number placed a small watch-key upon the centre of the mat before the parlor door. Then placing himself in communication with Mr. Brown, he kept his own eyes continually closed. It was evident that there was no guiding impulse in action. The pair stumbled aimlessly around the room, over the chairs and against the partitions,—the blind leading the blind,—until Mr. B. exclaimed, "There is something very strange about this gentleman; I think you must be experimenting with me!" He then stopped, and removed the handkerchief from his eyes; but being assured that all was right, he renewed the search. His companion now kept his eyes open, and was soon taken to the place where he had deposited the key. He stated that while his eyes were closed he lost all idea of direction, and could not tell in what part of the room he was; but when his eyes were open, as soon as he addressed Mr. Brown, mentally, with the words "Go there, go there!" he found himself instantly obeyed.

Another experiment proved that the volitional impulse might be conveyed through the medium of a compound conductor. Let A represent Mr. Brown; let C represent the individual by whom he is to be guided; and let B represent a third person. Now if C with his left hand grasps the naked left arm of B, while the back of the left hand of B is applied to the forehead of A, he can guide the movements of A, even though both A and B are blindfolded and previously ignorant of the place to which C would direct A. This was demonstrated to our complete satisfaction.

The last experiment of the series was the following: Placing

myself in communication with Mr. Brown, I requested him to point in the direction of the object upon which my thoughts were concentrated. I had fixed upon the top of the church-spire for the object; but no sooner had we commenced the experiment than I became aware of a ludicrous uncertainty regarding the proper angle of elevation of the line which should lead my thoughts to the top of the spire. Mr. B. was whirling me rapidly round and round, so I hastily abandoned the attempt to soar so high, and endeavored to concentrate my will upon an imaginary line up and down the centre of the eastern *facade* of the church. He at once ceased to turn around, and after wavering a few seconds he pointed, not exactly east, towards the centre of the *facade*, but east-north-east, towards the centre of the tower which supports the spire upon which my thoughts had been originally directed.

In answer to our inquiries, Mr. Brown stated that when placed in communication with another person, as previously described, his movements are guided by a light which seems to stream from his head in the direction of the object which he seeks. This light appears to him very much like a gas-light viewed through smoked glass. At the commencement of an experiment, or if it does not proceed in a satisfactory manner, the light seems broken up into numerous smaller lights which flash distractingly in every direction; but soon they all concentrate into a single flame which seems to dart in the direction which he must follow. Sometimes the light beams without deviation from the right course; but often it describes a zig-zag path for his guidance.

He stated that his health was perfect, and that he seldom felt fatigued by his exhibitions, though it is necessary for him to rest often between the experiments in order to maintain the acuteness of his faculty. Sometimes, however, experiments with certain individuals are very exhausting, as, for instance, his experiment with Dr. Earle. The peculiarity of his case consists in the fact that his singular nervous susceptibility does not require the production of artificial somnambulism or *hypnotism* as the condition of its manifestation; nor does it at all interfere with the integrity of his will. It is not in obedience to an irresistible impulse that he pursues the luminous apparitions which seem to proceed from his head, but he can always follow or refrain from following their guid-

ance, precisely as a person in the dark can follow or refrain from following the movements of a lantern which flickers along the path before him.

No. 533 West Adams St.

Editorial.

Mind Reading?

Quem Deus vult perdere prius dementat.

"Who sups with the Devil should have a long spoon."

Sanitary.

The note of warning sounded by the Journal in the early part of the season, concerning the danger to public health threatened by the filthy condition of the city, has been obeyed too late by the Board of Health, which, with its usual tardiness, has attempted to shut the stable door after the steed has been stolen. It has commenced its work of "prevention" when the pestilence is in our midst.

The Board has, at last, after months of delay, appointed a Sanitary Superintendent who can legally perform the functions which have, for the past four months and a half, been subjected to maladministration in defiance of law.

The newly appointed officer, Dr. Ben. C. Miller, accepts the position under the most unfavorable auspices, with an epidemic of cholera threatening him in front, with "confusion worse confounded" in his rear; without practical experience in the duties of his new position, and with the odium of public distrust and contempt which has been earned for the position; he has before him an herculean task, viz., to reduce official chaos of six years accumulation to order, to lay the foundation for a system of sanitary statistics, to fight the pestilence, and to restore to public confidence that which has thus far merited only ridicule and contempt.

To accomplish all these, Dr. Miller brings into the contest youth, energy, a large share of administrative and executive ability, ambition, industry, and integrity of purpose, and, what is

perhaps quite as important, the prestige of success in the important official positions which he has hitherto filled. We wish him success most heartily, although we do not see how the wish can be realized under the operation of such a stupid enactment as that to which the Board of Health owes its existence.

The only sensible reform movement in sanitary matters in this city will be that which, beginning by abrogating the law which created the present Board of Health, thereby legislating it out of existence, continuing by utilizing the talent and ability now contained in the Health Department, by excluding the useless lumber which now encumbers it, shall conclude by organizing a responsible Department (not an irresponsible Board) which shall be, what this has never been, a conservator of public health and vital statistics. H.

County Hospital.

After much persuasion, and, rather, too, mature deliberation, the Board of Supervisors of Cook County, have at last determined upon and selected a site as a preliminary step to the erection thereupon of a new County Hospital.

The site selected, the corner of 12th street and Ashland avenue, in what is now the southwest corner of the city, is, we believe, one whose excellence will become more and more apparent with the lapse of time.

Aside from its general advantages in relation to the whole city, it will provide hospital accommodation for that district, the West Side, where it is most especially needed and entirely wanting hitherto. The South and North Sides of the city are at present comparatively well supplied with hospitals, while the West, although containing the largest area, the largest population, and the greatest number of the classes of population more especially requiring hospital accommodation, has none whatever.

While there has been good ground of complaint against the Board of County Commissioners for the delay in making their selection of this site, we are disposed to overlook their past delinquencies in this regard, on the condition that they will display equally good judgment in the adoption of a plan for the building. Let us have no more mediæval castles, with

"Massive towers and donjon keep,"

with

"Flanking walls that round them sweep,"

and

"Dungeons dark where" *patients* "weep."

These are things of the past, which sanitary science repudiates. Too much money has already been squandered in this city upon these illustrations of mediæval art, and sanitary nescience, and let us fervently pray that no more be contributed to the construction of these death-traps.

We commend to the careful consideration of the supervisors the suggestions of Dr. John M. Woodworth, Supervising Surgeon of the Marine Hospital, concerning the erection of Pavilion Hospitals, roughly built, of cheap material, with due attention to ventilation and cleanliness made necessary by the demands of sanitary science, which could be destroyed as soon as they should become foul and unhealthful, and rebuilt many times at a less cost than is now required to construct an ordinary hospital.

Let every physician in the community use his influence to prevent a great waste of public money and a great injury to public health which would inevitably accrue from the rejection of modern ideas in the construction of the new County Hospital. Let it be impressed upon the minds of the commissioners that the object of the hospital is not to enrich contractors, not to be a monument of the ignorance and stupidity of its constructors, but to preserve public health. H.

The Cholera.

Amidst the numerous conflicting statements, and diverse opinions regarding this disease, which have prevailed, during the past six or eight weeks, in the town of Lake, on the southern border of the city, and the impossibility of arriving at any definite conclusions regarding it, the JOURNAL has refrained from reporting any of the cases heretofore, in order to avoid increasing the panic which threatened more serious consequences than did the disease. To-day, August 22, in company with Sanitary Superintendent Ben. C. Miller, and Acting Inspector Simons, we made a personal and thorough inspection of the "infected district," lying south of thirty-ninth street, west of State and east of Clark, and altogether

outside of the city limits, and in the town of Lake. The cholera hospital was first visited, and was found in excellent order, under the care of Mr. Rofe, the newly appointed interne. There were found here three convalescents presenting no symptoms sufficiently characteristic to indicate the pre-existence of any special malady. In a number of private residences visited, the patients had either died or recovered, but two convalescents were found in the same negative condition. At No. 971 Butterfield Street, a German child of four and a half years had just died after an illness of twelve hours. The evidence furnished by inspection of the corpse a few minutes after death indicated clearly that the cause of death had been cholera. In the same house a child of about three years had diarrhœa.

The district is apparently in good sanitary condition, the surface of the ground dry, and there is no stagnant water to be found. The houses are generally of two stories, of wood, and new, the inhabitants principally German. The water supply has hitherto been bad, having been obtained from what are called by courtesy "wells," one of which when measured was found to be two feet deep and three feet from the surface of the ground; these have been rendered unavailable by the Board of Health, and the Board of Public Works has provided a supply of pure lake water, with the necessary hydrants. There is no necessity whatever for alarm, and unless one should use some diligence and have unusual facilities, as in our own case, for the detection of the disease, it would escape notice altogether.

The measures taken by Dr. Miller and Dr. Simons, for the detection and arrest of the disease in its preliminary stages, have been very effectual, and the prospect is now, that with continued efforts in the same direction, the few remaining germs of the disease will be eradicated. H.

At the last special meeting of the Chicago Society of Physicians and Surgeons, held on Monday, 18th of August, certain irregularities were perceptible in the proceedings which merit especial attention from the officers and members, in order that their recurrence may be prevented.

Of these irregularities two were especially prominent; first, the publication of the proceedings by the reporters of the secular

press, not having been previously revised and corrected by the regular reporter of the Society, whereby many errors and misunderstandings might have been suppressed; and secondly, the participation in the proceedings by persons not members of the Society, without invitation of, or introduction by, the presiding officer, some of whom are notoriously disreputable, and whose names alone published in connection with the Society will be sufficient to constitute a stain upon its hitherto stainless record.

We hope that, in future, when the proceedings shall be deemed to possess sufficient interest to the general public, to excuse their publication in the secular press, they may be reduced to writing by the regular reporter of the Society, and transmitted through that channel; and further we trust, that, should the meetings of the Society again be intruded upon and its discussions interrupted by unauthorized and uninvited guests, the presiding officer will promptly silence all such, in the most summary manner. It is time that these impudent pariahs of the profession be taught their true place, and that is, outside the pale of respectable association. H.

Books and Pamphlets.

The absence from the city of the head of our review department must be our apology for omitting to notice a large number of books and pamphlets received during several weeks past. We shall endeavor in our next to make good all deficiencies in this regard, and notice all such seriatim and in detail. H.

A Move in the Right Direction.

At the recent meeting of the State Medical Society the following resolution was introduced by Dr. Ira Oatman, of Sacramento:

"*Resolved*, That it is the duty of, and we hereby recommend to, the Legislature of California to pass a law making it a misdemeanor for any person, for any purpose whatever, who is not a graduate of some institution of learning authorized by law to confer the degree of 'Doctor of Medicine,' who shall place before or after his or her name, in any manuscript, label, wrapper, card, handbill, circular, newspaper, pamphlet, magazine, book, or any advertisement, the word 'Doctor' or the abbreviation M.D. or Dr., or any others signifying directly or constructively that the person is a graduate of such an institution, or who shall authorize or sanction the same by others in his or her interests; and that any person found guilty of such misdemeanor shall be punished by a fine of not less than ——— dollars, or imprisonment for not less than ——— years, or by both such fine and imprisonment."

—*Western Lancet.*

Illinois State Medical Society.

SECRETARY'S OFFICE,
No. 296 W. Monroe St.,
Chicago, July 1, 1873.

At the last Annual Meeting of the Illinois State Medical Society, held in the city of Bloomington, May 21st and 22nd, 1873, the following officers were elected for the ensuing year, and the following committees appointed to report at the next meeting of the Society, to be held in the city of Chicago, on the third Tuesday of May, 1874. T. D. FITCH, *Sec.*

Officers—President, T. F. Worrell, M.D., Bloomington; 1st V. President, E. L. Holmes, M.D., Chicago; 2nd V. Pres., S. H. Birney, M.D., Urbana; Treasurer, J. H. Hollister, M.D., Chicago; Permanent Sec., T. D. Fitch, M.D., Chicago; Assistant Sec., Wm. E. Quine, M.D., Chicago.

STANDING COMMITTEES.

Board of Censors—David Prince, M.D., Jacksonville; A. L. McArthur, M.D., Rockford; J. L. White, M.D., Bloomington.

Committee of Arrangements—N. S Davis, M.D., Chicago; Wm. E. Quine, M.D., Chicago; Charles G. Smith, M.D., Chicago; Edwin Powell, M.D., Chicago.

Committee on Practical Medicine—S. K. Crawford, M.D., Monmouth; John Wright, M.D., Clinton, DeWitt county; A. K. Van Horn, M.D., Jerseyville, Jersey county.

Committee on Surgery—W. P. Pierce, M.D., Lemont; R. Roskotten, M.D., Peoria; E. R. Willard, M.D., Wilmington.

Committee on Obstetrics—S. C. Plummer, M.D., Rock Island; C. T. Horner, M.D., Naples; Robert Boal, M.D., Peoria.

Committee on Drugs and Medicines—Wm. E. Quine, M.D., Chicago; G. Wheeler Jones, M.D., Danville; E. P. Cook, M.D., Mendota.

Committee on Necrology—G. W. Albin, M.D., Neoga; J. O. Hamilton, M.D., Jerseyville; J. K. Secord, M.D., Elmwood.

Committee on Ophthalmology—E. L. Holmes, M.D., Chicago; J. P. Johnson, M.D., Peoria; F. C. Hotz, M.D., Chicago.

Committee on Otology—Samuel J. Jones, M.D., Chicago; Charles Hunt, M.D., Dixon; Thos. Galt, M.D., Rock Island.

SPECIAL COMMITTEES.

Committee on Idiocy—C. T. Wilbur, M.D. Jacksonville.

Committee on Galvano-Therapeutics—David Prince, M.D., Jacksonville.

Committee on Local Functions of the Brain—Charles W. Earle, M.D., Chicago.

Committee on Phthisis Pulmonalis—J. M. Hutchinson, M.D., Chicago.

Committee on Stricture of Urethra—E. Andrews, M.D, Chicago.

Committee on Diseases of Respiratory Organs—Daniel Lichty, M.D., Rochelle.

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION.

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Illinois Institution for the Education of Feeble Minded Children.

This Institution, which was inaugurated in 1865 as an experimental school for the education of feeble minded children, has been so successful in training this unfortunate class that at the last session of the General Assembly it was organized upon an independent basis, and was incorporated as one of the permanent charitable institutions of the State, thus completing the noble circle of public charities of the commonwealth of Illinois.

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The education furnished by the Institution will include, not only the simpler elements of instruction usually taught in common schools, where that is practicable, but will embrace a course of training in the more practical matters of every-day life ; the cultivation of habits of decency, propriety, self-reliance, and the development and enlargement of a capacity for useful occupation.

The combination which this Institution presents, of practical medical care and proper physical and mental training, with efficient educational resources, will supply, it is hoped, a want which has long been felt and imperatively demanded by this unfortunate class of children and youth of the State.

The improvement and progress of the pupils have been very encouraging, and parents and friends in almost every instance have expressed satisfaction with what has been accomplished in the short time since the school was organized.

The Institution is open to the inspection of the public at all reasonable hours ; and all are not only cordially invited, but are earnestly requested, to visit the school.

It is a State Institution, and board and tuition are free during the school year of ten months.

It is the desire of the Trustees to ascertain accurately the number of this unfortunate class of persons in the State, and persons knowing the residence of any in Illinois will confer a favor by reporting the same to the undersigned, as it is desirable that reliable statistics may be gathered, in order that proper legislation may be made in their behalf.

The next school year will begin about the first of September, and those designing to apply for the admission of pupils should do so at once, as the accommodations are limited.

Applications for admission, information, etc., should be directed to

DR. C. T. WILBUR, *Supt.*,
Jacksonville, Illinois.

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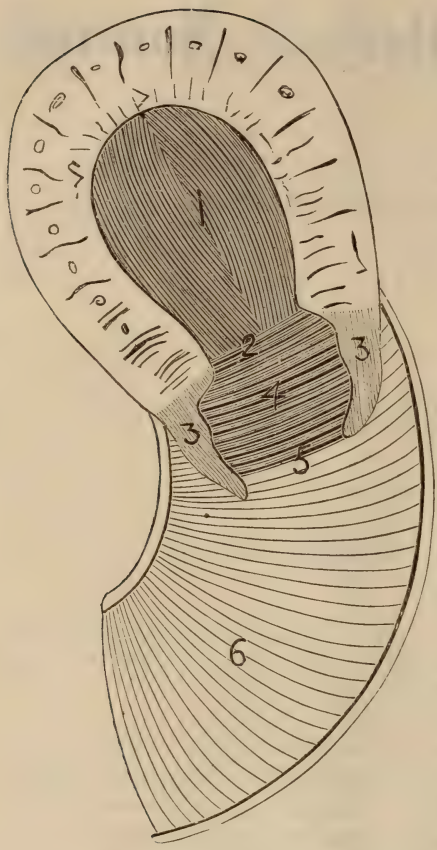
Original Communications.

ARTICLE I. — *The Cervix Uteri, Before, During and After Labor.* Read July 14, 1873, before the Chicago Society of Physicians and Surgeons, by JOHN BARTLETT, M.D.

In many of the text books on obstetrics the description given of the cervix uteri before, during and after labor is meagre, indefinite or erroneous. I propose this evening to give my views of its relations, with the conviction that if they are incomplete and not free from error, they are yet in the direction of truth, and with the expectation that this imperfect effort may lead to a full investigation and elucidation of the subject by those best qualified to do it justice.

I will first give the impressions which reading had left upon my mind as the commonly received relations of the cervix; then state the views which observation has suggested to me as correct; and finally, point out the interest or importance which these may have for the obstetrician.

As to my early views, which, it will be inferred, I deem as fairly deducible from the statements to be found in the books: in pregnancy, I regarded the cervix as remaining undeveloped until



CERVIX UTERI AFTER DELIVERY.

1. Cavity of uterus.
2. Firmly contracted os internum.
3. Flaccid tissue forming ring of cervix.
4. Cavity of neck.
5. Flaccid and flabby os externum.
6. Vagina.

within two weeks of term, contributing nothing to the cavity of the gravid uterus. That at that time it began to expand from below upwards, gradually disappearing from the touch, till nothing remained of it but a cushiony circle, or, at most, a narrow, flattened, sphincter-like ring of tissue.

Observing dilatation of the os and retraction of the tissue forming it to be coincident and allied phenomena, I naturally associated with the complete dilatation of the os the entire disappearance of the neck; so that, at the instant of complete dilatation, in the language of Cazeaux, "the uterus and vagina formed but a single uninterrupted canal."

After labor, I thought that the contractions of the uterus, taking place equally in all parts going to make up its walls, formed it into a body the shape of which, exteriorly and interiorly, was not materially different from that of the distended condition. I believed that the margins of the os uteri which I had last felt still expanding and vanishing above the descending head, had kept pace in contraction with the body of the uterus, and that its firmly contracted, thick and rigid margin could be felt after labor immediately continuous with the upper end of the vagina. In time, according to my idea, as involution progressed, the uterine cavity

reached by the finger beyond the os just referred to, gradually contracted, and became divided into body and neck, as before labor; the os described meanwhile contracting, and assuming substantially its original shape and relations below the vaginal attachment.

These views I now regard as entirely erroneous. For them, observation has substituted these which follow:

In regard to the cervix before labor, I look upon all that part of the uterine walls projecting in vertex cases, like an inverted dome, into the vagina, and which may be felt enclosing the head, as the largely developed vaginal portion of the neck; that is, I regard all that uterine tissue lying below the attachment of the vagina, and which may be traced by the finger moving in any direction from the os uteri toward the vaginal circumference, as the vaginal portion of the cervix.

These statements, it must be noticed, have reference to the vaginal portion of the cervix only. There is reason to suppose that the uterine two-thirds of the neck are developed in like proportion. The extent of this development may be in a measure estimated by conditions or events accompanying natural and unnatural states of the womb after delivery.

I regard the vaginal portion of the cervix, at the time of the passage of the fœtus, as a collar of appreciable depth not in the same plane with the vagina, but projecting into it.

After the birth of the child, this fleshy band does not contract and form with its free margin the rigidly contracted orifice discovered after natural labor and generally somewhat indefinitely called the "os." Its tissue differs from that of the uterus, its power of contraction is much less. As a result, after delivery it may be felt as a flabby, floating collar hanging from the uterus into the vagina, "like a section of large intestine." Continuous with this fleshy cylinder, externally and above, is the attachment of the vagina; continuous with it, above, and within, is the rigidly contracted os internum. The involution of the post partum cervix soon begins, and at the expiration of ten or twelve days it will have assumed its ordinary form and relations.

As it was from examinations per vaginam, after labor, that this state of the cervix was made known to me, and as by this means inquirers will seek to verify these statements, it may be well to

make a detailed reference to such an exploration. If, after delivery, the uterus being contracted, a finger be introduced into the vagina, it may pass directly up to the "os," without coming in contact with any structures contravening the idea of the simple relation of the parts at first thought by me to be correct. If an examination be made critically, it will be recognized that the finger encounters an illy-defined orifice or slit, the margins of which are soft, flaccid and easily movable; penetrating these folds, the os is felt higher up than the normal position of the os externum by about the length of the floating cervix. The end of the finger resting upon this contracted ring, the os internum, the edges of which project prominently and abruptly inward, is not of course in the vagina, it is in the canal of the cervix. If it be moved outwardly from the pelvic axis in any direction, it will encounter a loose tissue which may at first be supposed to be the walls of the vagina; but if this surface be followed downward for an inch or an inch and a half, a free margin will be reached, which, upon being traced, will be found to be the rim of a fleshy ring. The surface encountered is the inner wall of the canal of the vaginal portion of the cervix; the margin traced is the still widely expanded, imperfectly contracting os externum.

The dimensions of the vaginal portion of the cervix are variable. A radius or meridian of the ante partum cervix, measured from the os to its circumference, is generally not less than two inches, and occasionally, when the mouth of the womb is far removed from the pelvic axis, the larger radii would measure five inches or even more. During the passage of the child, the length of the neck, usually about three-quarters of an inch, in some abnormal conditions is so great that its margins may be protruded at the vulva. After delivery, the infra vaginal cervix, commonly an inch, or an inch and a half, in length, in cases of extreme hypertrophy of the neck, has been found longer than the vagina.

The facts here detailed have a bearing upon several points of obstetrical theory and practice. The different action and condition of the body and neck of the uterus here pointed out may be considered another striking evidence of the correctness of the distinctions which physiologists and practitioners have drawn between these portions of the womb.

The views here given are important as bearing upon the long

disputed question of the mode of development of the cervix in pregnancy. On this point, obstetrical writers seem to be divided between two opinions; one set maintaining that the neck develops in expanding from above downward, and becomes part of the uterine cavity as early as the sixth month. Others, as Stoltz, Cazeaux, and Chailly, pronounce this view an error, and declare that the neck forms no part of the uterine cavity till within two weeks of term, when it expands from below upwards, disappearing gradually, and at the end remaining only as a cushiony circle.

In the light of the views here expressed, the second of these theories, which I believe is now most favorably regarded, is altogether erroneous; and the first fails to point out the whole truth. I think that early in pregnancy the cervix begins to develop throughout its entire extent; that gradually the upper portion of it expands and becomes a part of the uterine wall. Meanwhile, (and this is the fact which I think is entirely overlooked by Stoltz and Cazeaux), that portion of the neck which remains unexpanded has grown, as it were, on account of its *preparatory* development, to the length of the original cervix; finally, the whole is encroached upon and taken up to form the uterine walls. To put the idea in different language: early in pregnancy the neck is called upon to supply its quota to the enlarging body. Speaking somewhat figuratively, as ring after ring of tissue is demanded from the upper part of the cervix, the preparatory development in the remaining portion is such that the length of the neck is not apparently impaired. so that, what remains of it as late as two weeks before labor has been mistaken for the entire infra and supra vaginal cervix, whilst the loss by the continual transfer from the upper portions of the neck to the uterine walls has entirely escaped notice. That circle of the neck which corresponds at the time of an examination to the limits of its expansion, is regarded by writers as the os internum. The os internum is of course, as before labor, above the attachment of the vagina, and, near term, far removed from the examining finger. The apparent constriction taken for it, is simply that point in the cervical walls, marking the constantly descending line of demarkation between the expanded and yet unexpanded portions of the neck.

In my early examinations the contracted post partum os was mistaken for the os which I had felt before labor, the os externum;

and all that structure, consisting, at the beginning of labor, of the vaginal portion of the cervix, measuring several inches in depth, and forming the os which I had so patiently watched a short time before, was entirely overlooked and lost sight of, and by a species of jugglery as it were, a second os, which I knew nothing of, was imposed upon me for the one with which I had become from long watching familiar.

It is important, in lacerations of the os uteri, to know the site of the bleeding surface. In some cases of hemorrhage, occurring in the earlier years of my practice, which by a process of exclusion were referred to a laceration of the neck, I had no other idea than that the oozing proceeded from the little irregularities in the contracted os internum, when in all probability there were surfaces bleeding, such as I have since recognized under like circumstances, in the torn cervical rim, as large as the lower half of the little finger. In cases where the hemorrhage is referred to such lacerations, the practitioner will do well to trace the margin of the os externum; if it be much torn, the rent cannot escape detection, and the application of styptics may readily be made.

Some authors refer irregularities of outline of the os tincæ in multiparæ to lacerations of the mucous membrane of the os during labor. Is it not much more probable that such irregularities are dependent upon more decided lesions of the neck? My experience would indicate that lacerations are more frequent than is commonly supposed. The cases of hemorrhage proceeding from these injuries of the cervix which have fallen under my notice, have yielded to remedies intended to secure contraction of the uterus. As the mass of the vessels supplying this part of the womb pass through the tissue of the os internum, it is manifest that the want of contractility of the neck is in a measure compensated for by the mechanical constringing of its vessels by the contraction of its upper orifice.

In certain forms of rigidity of the cervix the relations here given would suggest an early resort to the knife. In those cases in which labor is delayed by the os girding the neck of the child, in all probability, as suggested by some writers, the constricting orifice is the os internum. In this connection, this inquiry has occurred to me: Does mechanical irritation of the os externum tend to excite contraction of the os internum?

The idea here presented of the mode of development of the cervix is of interest in relation to placenta prævia. By some, doubtless, it may be objected that the presence of the placenta over the os uteri is *prima facie* evidence that my opinions as to the development of the neck are incorrect. To my mind, there remains but the acceptance of the palpable facts, and the recognition in them of another striking example of the extraordinary power which nature has to accommodate herself to circumstances. The imperfectly contractile character of the tissue of the cervix deserves more attention than it has yet received in considering the growth upon it of the placenta; and it is possible that some fact of practical value in regard to the management of placenta prævia may be adduced from an improved knowledge of the nature of the tissue to which it is attached. By even the most recent writers, as Barnes and Thomas, it is distinctly stated that the os internum is below the placenta prævia; according to my views, the placenta is below the zone of fibres developed from and representing the os internum. In accordance with the theory of cervical development here stated, the attachment of the placenta to the cervical zone is the more recent, and, inferentially, the less firm in a line and direction *from* the os *toward* the placental margins, a circumstance indirectly favoring the suggestion of Barnes to detach the placenta from the zone of the neck in certain cases. Consideration of the statement above made in regard to the contraction of the fibres of the os internum as a cause of arrest of hemorrhage from the lacerated cervix, may confirm and elucidate the proposition of Barnes, "that the one constant condition of physiological arrest of flooding [in placenta prævia] is contraction, active and tonic, of the muscular structure of the uterus."

There is another condition upon which the facts here presented have a direct bearing. I refer to hour-glass contraction of the uterus. Before proceeding to any remarks on this subject, I will call your attention to certain considerations in regard to the position of the os internum. In the contracted state of the womb as stated, we find it in deep reach of the finger, and but little above the attachment of the vagina. But it must be remembered, that the relative altitude above the os externum of those fibres of the walls of the expanded uterus, the contraction of which forms the internal os, is not ascertained, and that it must vary with the degree of

expansion or contraction of the womb. Thus, in a flaccid condition of the organ after delivery, it may be several inches above the vaginal junction. The statements of writers as to the seat of hour-glass contraction, and the part of the uterus by which it is caused, are discrepant and confusing. Much of this misunderstanding and obscurity, it is believed, may be cleared away in the light of facts contained in this paper. From a person proposing to teach the true nature of this abnormal condition of the uterus, an answer to these questions should be expected: What was the condition in your cases of the os externum? Of the cervix uteri? Of the os internum? What was the probable altitude of the os internum above the os externum? And where, relatively to the internum, was the stricture?

I may state in this connection that, as the womb is capable of becoming flaccid as late as two weeks after labor, the os internum may be expected to be liable to corresponding changes after a like interval.

I desire, before closing this essay, to make some suggestions intended to account for the want of more general recognition of the correct anatomy of the cervix after labor. Its true condition has escaped the observation of many, because there is not very often occasion to make examinations which would disclose it. For the most part, after delivery, the fingers are introduced to ascertain if the patient be well cleared, and if such be the case, no further examination is made, or, in the event of the exploration of the vagina being again necessary, it is generally rendered so by an accident unfavorable to critical exploration. Again, it must be remembered that the condition here pointed out is dependent upon, and not to be recognized without a contraction of certain parts of the womb.

I have been asked, why has not the peculiar anatomy which you describe as distinguishing the post partum cervix been observed by the pathologist? I repeat, that the distinction indicated is dependent upon a vital contractility; when that passes away, the distinction ceases.

A few words more. It will doubtless be inferred that I regard these views as novel. Whilst it is manifest that the true condition of the cervix uteri during and after labor is practically familiar to many standard writers, so far as my knowledge of the literature

of the subject goes, no one has connectedly set forth the facts here stated.

I am well aware, however, that my means of reference are too limited to justify me in saying that they are not well known. Of this only am I assured, that however often these ideas may have been taught, a lesson from them is not now amiss.

ARTICLE II.—*Case of Chronic Inflammation of the Stomach.* From the Transactions of the Chicago Society of Physicians and Surgeons; Meeting of June 14, 1873. By Drs. A. FISHER, JAMES N. HYDE, and I. N. DANFORTH.

Dr. A. Fisher gave the following details of a case of chronic inflammation of the stomach:

I have been acquainted with Mrs. I——, for the past sixteen years, and during that time have been her only physician. She was 49 years old, of a nervo-bilious temperament, and was always in delicate health, though never dangerously ill. She suffered from occasional attacks of intermittent fever, and generally had a red tongue, irritable stomach and dyspeptic symptoms, though she was able to discharge her household duties, and called herself well.

The following note, penned by her husband, describes her later condition:

"In the summer and fall of 1872, she complained frequently of a 'fullness' after eating, or very moderate drinking, and remarked several times, laughingly, 'if it were not absurd, I should say my throat was filling up.' During January and February of 1873, this feeling increased, and, towards the latter part of February, she began to lose her usual capacity, though not her desire, for food. Believing herself to be suffering from an aggravated form of dyspepsia, she tried very many remedies without success. In March, she gradually commenced the use of gruels, etc., as the only dietetic articles she could retain on her stomach, and was soon visited by that physical weakness which results from a low diet. All through March and early in April, she repeatedly remarked, 'I must get up, for I feel that if I should keep my bed for one day, I should not soon want to get up again.' On the 9th

of April, when we moved, she was extremely weak and emaciated, and, on the 12th, was startled by your asking if she had any hereditary tendency to cancer in her family. On the 20th I described her condition to a friend as follows: Parched mouth, with coppery taste and canker sores—copious discharge of frothy phlegm—great thirst—burning pain in the chest—distress always after eating, sometimes after drinking, located under the breast-bone, and between the breasts—tendency to vomit food directly after eating, and, when the latter was retained, free vomiting of frothy matter—regular pulse and constipated bowels. On the night of June 6th, she commenced to discharge a fetid yellowish matter at intervals of about six hours. At ten o'clock A. M. of the 9th, this discharge ceased, but recommenced at seven o'clock the next morning, and was very copious, but not nearly so fetid as before. Her average pulse during the week that preceded her death, was 112—up to June 9th, the highest noticed was 122. From the 4th to the 10th of June, she had no stools, but frequent copious and painless urination. She had no *feeling* of fever, though numerous signs of its presence were not wanting. On the 10th of June, morphia was administered at eight o'clock A. M., and six P. M., at her urgent request; she was then failing fast, and died quietly at four o'clock A. M., June 11th."

Mrs. I—— called on me for a prescription last October, (I had not prescribed for her previous to that time for nearly one year), and said she thought her liver was affected. I made a careful examination, and then informed her that her stomach was the source of her trouble, and advised her to regulate her diet. I ordered for her bismuth and pepsine, which she thought for a time gave her relief. I prescribed for her two or three times in October, once in December, and three or four times in March, using those remedies which were indicated to allay the irritability of the stomach and to assist the digestion—this without any permanent benefit, the patient growing weaker and becoming more emaciated.

I was first called to see her in her last illness, on the 13th of April. I found her very much emaciated, with sallow skin, dry, red and smooth tongue, pulse 70 in the minute, with tenderness in the region of the stomach, and an irregular indurated mass, evident to the touch somewhat to the left of the pit of the stomach. She com-

plained of a burning pain under the middle of the sternum, aggravated by the ingestion of food, which she did not believe entered the stomach. She took no solid food, and but a few spoonfuls of liquid nourishment at any one time, this amount generally producing vomiting of a glairy, frothy mucus, unmixed with either blood or pus. Her bowels were constipated, but moved daily by enemata.

I ordered eight grains of the subnitrate of bismuth every six hours, with sinapisms over the stomach, and a diet of beef-tea and mucilaginous drinks. In four days I saw her again; there was little less vomiting, and she was otherwise in no better condition. I then prescribed a pill of one-fourth of a grain of nitrate of silver, and two grains of the English extract of cicuta, every six hours, continuing at the same time the use of the bismuth—this with apparent benefit for one week. The "burning heat" was not so severe, though she felt that nothing remained in her stomach and had occasional attacks of vomiting.

On the 25th of April, Dr. N. S. Davis saw her with me in consultation. We agreed that there was thickening and contraction of the stomach, and, from the feel of the noduled induration, already described, as well as from the consideration of the history of the case, we were led to fear cancer of the stomach, but did not express a positive opinion on the subject.

Dr. Davis advised the continuation of the nitrate of silver and cicuta, and the substitution for the bismuth of one-fourth of a grain of carbolic acid, with four drops of the tincture of belladonna in syrup every six hours. This course was followed for one or two days, when either the carbolic acid or the belladonna irritated the stomach, and both were suspended; the pill being administered alone for about one week longer. At the expiration of that time, all medication was discontinued, as she could not retain even a teaspoonful of beef-tea in the stomach. Her mouth and lips were kept constantly moistened by water, and a teaspoonful of it given when called for.

Her sufferings were very great and grew constantly worse throughout her illness, and as a cure seemed impossible, I advised, at the last, hypodermic injections of morphia sufficiently often to relieve her of pain. They had a happy effect, and she continued to take them, increasing the dose according to the necessities of her case for about three weeks, until she died, June 11, 1873.

The autopsy was made by Dr. James N. Hyde, June 12, 1873.

There was great emaciation and cadaveric rigidity. The brain was not examined. The heart, lungs, liver, spleen, kidneys, pancreas, uterus and ovaries, were found to be in a condition entirely normal. The stomach was greatly contracted, especially at a point about one inch distant from the pyloric extremity, its walls were hypertrophied, its mucous membrane congested, thickened and partially eroded. There was no post-mortem digestion of its coats. A small cul-de-sac, on the left side and in the greater curvature, seemed to exhibit fewer traces of inflammatory products than any other portion, and was partially filled with a serous liquid. The œsophagus was not implicated in the diseased portions. The omentum was studded with small granules of the size of split peas, and, in the interstices of the latter, was moderately injected, but not greatly altered. The duodenum seemed quite free from any thickening of its coats, but, to a certain extent, participated in the condition which was evident in all other portions of the intestinal tract—congestion and traces of a low form of inflammatory action being everywhere present. The bladder was moderately distended with limpid urine.

The stomach was sent to Dr. I. N. Danforth for microscopical examination.

PATHOLOGY.

The walls of the stomach were thickened to an extreme degree; the organ was very much contracted, in fact, it was gathered up into a hard, irregular, "puckered" mass of folds and ridges, and was doubtless permanently retained in this condition. The mucous membrane was excessively hypertrophied, rough and brawny; it was successively elevated and depressed, as a consequence of the general contraction of the stomach, and these elevations and depressions, or "hills and valleys," (Rindfleisch), remained after the stomach was cut open and put upon the stretch.

MICROSCOPY.

I have examined several thin and carefully prepared transverse sections, extending through the entire thickness of the stomach, and find one uniform condition applying to them all.

First.—The connective tissue is enormously increased, not only

the submucous layer and that beneath the muscular tissue, but also that delicate inter-connective tela which is associated with the gastric follicles. This new tissue is of course the product of an inflammatory proliferation of the connective tissue-cells; these cells, being stimulated by inflammatory action to an abnormally rapid growth, must necessarily produce tissue which is abnormal in *type* as well as in quantity, in accordance with the general law governing inflammatory proliferations. Indeed, this new tissue so nearly resembles ordinary cicatrix tissue, both in appearance and behavior, that we may regard them as practically identical.

Second.—The gastric follicles are all but destroyed; they have been slowly choked and squeezed out of *functional* existence by the progressive contraction of the newly formed connective tissue. In none of the sections examined, were the gastric follicles in anything like the natural size or condition, and generally they were so pinched and distorted as to have almost lost their identity. Hence, the inability to retain or digest food. But the same contraction which destroyed the gastric follicles, also involved the nerves of the stomach; they were subjected to exactly the same mechanical violence, and of course they uttered their protest in the only language known to them. Hence, the extreme pain of which the patient complained, and the resulting inference that the case was possibly one of cancer of the stomach.

We have, then, this sequence of events:

1st.—The development of inflammatory action, which was from the first of low "grade," and therefore all the less likely to attract sufficient attention, and cause sufficient discomfort to lead the patient to call a physician, or seek relief from a trouble which, in its incipiency, was probably regarded as hardly worth noticing.

2nd.—The proliferation of connective tissue-cells, producing a superabundance of tissue of low type, which so nearly resembled scar tissue that it behaved *like* scar tissue. Hence, the extreme and permanent contraction of the stomach. It is noticeable that the tissue primarily involved, namely, the connective tissue; and the pathological condition produced as a consequence thereof, namely, contraction, are precisely analogous to the events and consequences which we meet with in cirrhosis of the liver, and the small contracted kidney of one of the forms of Bright's disease.

ARTICLE III.—*Special Meeting of the "Chicago Society of Physicians and Surgeons," Monday evening, August* 18, 1873. Reported by PLYMMON S. HAYES, M.D., Chicago.

The meeting was called for the purpose of continuing the discussion of the subject of cholera. Dr. Owens was called to the chair.

Dr. Simons made the following verbal report: There had been ten deaths from cholera since the last meeting. The temporary hospital, situated near Burnside street, between 33rd and 35th streets, had been opened Tuesday, August 12th. A number of patients had been admitted, and these, when not in a stage of collapse at or about the time of their removal, appeared to enter upon convalescence more speedily than when treated at their residences. Carbolic acid, sulphate of lime, and chloride of iron, had been largely used as disinfectants. Five cases were in the hospital at date, and all but one were progressing favorably. Two of the nurses had exhibited premonitory symptoms of the disease, but soon recovered.

Little attention had been paid by the inhabitants of the infected district to the circulars distributed by the Board of Health. Even when summoning a physician to patients in collapse, they generally declared that the existing disorder was nothing graver than a simple diarrhœa.

One-third of the inhabitants had left the infected locality, and in spite of all remonstrance, few of the Germans could be induced to destroy their feather beds upon which cholera patients had died. Upon removal they generally carried with them these beds, and such elements of contagion as were capable of transportation therein.

Dr. Wood had examined under the microscope some water obtained from a filter well at No. 947 Burnside street, south of the city limits, and presented a specimen of it to the Society. The well was ten feet below the surface, and contained, therefore, surface water merely. The water had been filtered through two layers of sand and one of charcoal. Upon applying the permanganate of potassa test, he estimated that it contained 91,279 grains of oxidizable organic matter to the gallon, consisting mostly of a disorganized vegetable detritus, evident under the microscope.

Dr. Simons remarked that the majority of the recent cases had not made use of well water, but of hydrant water. Public hydrants had been that day established as far south as 37th street, the city limits, and the hydrant water had thus been placed within easy access of the entire neighborhood.

Dr. Boyd stated that the first cases of cholera in the section referred to, occurred in a family which had resided there for two years—the father and son were laborers, and their fare was extremely meagre. Every member of the family died; and he considered that every subsequent case was more or less directly traceable to this source of infection.

Dr. Wilder reported a case on 20th street, which Dr. Chas. Gilmore Smith considered to be a case of death from dysenteric hemorrhage.

Dr. Hyde read a letter from Dr. Davis Halderman, of Columbus, Ohio, giving details of fifty cases of cholera with twenty-seven deaths. The disease first appeared just outside the penitentiary, and the cases were confined to those living on low grounds. No symptoms of the disease had occurred in the infirmary, where, for several reasons, it might have been expected.

The speaker had secured a "rice-water stool" from Dr. Boyd, and had forwarded it under seal to Dr. I. N. Danforth for microscopical examination. The latter had just telegraphed that he had been unavoidably detained from attendance.

On motion, it was resolved that Dr. Danforth be requested to make known the results of his researches at the next meeting.

Dr. Simons stated that the following formula, obtained from Dr. T. Bevan, a member of the Society, had been employed with success:

R. Acid Sulphurosi, - - - - - oz. j.
Magnes. Sulphitis, - - - - - dr. j.
Capsici Tincturæ, - - - - - oz. ss.
Aquæ Destillat., - - - - - oz. j.
M. et S. Cochl. parv. no. j. in cyath. aq. bis die.

This preparation was intended as a prophylactic. When used as a remedy, two grains of morphia were added to the above, and a teaspoonful exhibited in water every half hour.

The following committees were then appointed, with instructions to report fully as soon as practicable:

"*Committee upon the history, nature and contagious character of the disease existing at present near the southern borders of the city.*"

Dr. Thomas Bevan, *Chairman.*
Dr. Jno. Bartlett. Dr. I. N. Danforth.
Dr. C. J. Simons. Dr. Lester Curtis.

"*Committee on the most appropriate prophylaxis and treatment of the disease.*"

Dr. J. H. Etheridge, *Chairman.*
Dr. H. P. Merriman. Dr. U. M. Boyd.
Dr. Chas. Gilmore Smith. Dr. F. H. Davis.

On motion, it was requested that hereafter the Secretary of the Society supervise the reports prepared for publication of its transactions in the secular journals.

The Society then adjourned.

Article IV.—*A Case of Locomotor Ataxy, Benefited by the Use of Nitrate of Silver.* By G. C. Paoli, M.D., Chicago.

Mr. B., 39 years of age, formerly a grocer, requested me to call and see him, in the beginning of the month of April. He informed me that, previous to my visit, he had been sick about eighteen months. On examination, I found the patient's appearance was pale, and he was somewhat depressed in spirits; his intellect was still unimpaired; his appetite was tolerably good, but he was inclined to vomit after a hearty meal, and also complained that he felt drowsy and heavy after he had eaten a good dinner. The bowels had a tendency to be confined. The bladder was rather weak, and sometimes the urine was passed involuntarily, accompanied with pains. There were no pains along the spinal column on pressure, except on the lower part of the vertebra lumborum. The upper extremities were apparently well nourished. The motor power of the arms was not impaired, except that when I asked him to press my hand, I found he did not possess enough strength to produce any powerful grasp.

The lower extremities appeared in a healthy condition. Temperature normal; the sensibility of the skin of the right leg somewhat obtuse. When I asked him to rise from his chair, he did so with extreme difficulty, and experienced equal difficulty in walking, staggering like a drunken individual; he lifted up his legs, but

threw them about in a disorderly manner. His sexual power was entirely extinct.

He admitted to me that he had abused himself in practicing masturbation, and had worked very hard to obtain an independent position; and, as I understood, denied himself regular and substantial meals, with the idea of getting rich.

He further informed me that his attention was first called to the disease, on finding himself gradually growing weaker in the lower extremities, and shooting pains in his legs, which were aggravated in wet weather, and sudden changes of temperature.

My prognosis in the case was rather gloomy, and I informed him that I could scarcely benefit him. I prescribed nitrate of silver, in half-grain doses three times a day. This remedy was first suggested and used by Professor Wunderlich, of Leipzig, and cases are reported by him which have been cured. Other physicians have also used it, but have not experienced any beneficial effects. In this case it quite surprised me: after using it about one month and a half, the patient could walk with a steady gait, and his appetite and digestion very much improved.

The pathology of this peculiar disease is very obscure at present. It has received a new name—locomotor ataxy—from Dr. Duchenne, to whom we are indebted for a graphic description of it; but to others belongs the merit of scientific researches, though the disease has been described under a different name—tabes dorsalis. It was in the year 1827, that Dr. Horn, of Berlin, gave a very good description of the symptoms, and later, and previous to Dr. Duchenne's description, Dr. Romberg presented some interesting details of the disease under the name of tabes dorsalis; but neither of the above physicians have, up to the present time, given any satisfactory explanation of its pathology.

ARTICLE V.—*Iodide of Potassium in Erysipelas.* By A. H. HIATT, M.D., Wheaton, Ill.

Having used iodide of potassium in the treatment of erysipelas for the last ten years with the best results, I deem it right to lay the fruit of my experience upon this subject before the profession, and the more so, as I do not see this remedy for erysipelas

recommended, or even referred to in any of the works on the practice of medicine which I have read.

The variety of the disease upon which I base my remarks particularly, and present my treatment, is the phlegmonous, though the remedy is equally efficacious in other varieties in which I have tried it.

It is when the disease makes its appearance first upon the side of the nose or the face, passing rapidly over the contiguous parts, until the entire face and scalp are invested, obliterating the features, enormously enlarging the head, the patient presenting a hideous and ghastly appearance, that the effects of this remedy are most promptly and happily seen. When called to such a case, whether the disease has passed to the full extent above named, or has but just commenced its ravages, I immediately prescribe the following:

R. Potassii Iodidi, - - - - - dr. j.
Aqua Pura, } - - - - *aa.* oz. j.
Syrup Simplex, }
Ess. Gaultheria, - - - - - dr. ss.

S. One teaspoonful every two hours, mixed with water; equal to seven and a half grains per dose.

This I continue until the violence of the disease is subdued, as indicated by abatement of the swelling, and mitigation of the tenderness of the tumid parts upon touch—and afterwards I continue the medicine in less quantity, or at longer intervals, until all traces of the disease are gone. In some very severe cases, attended with delirium, I give as much as ten grains of the iodide every two hours.

If the bowels are constipated, and the tongue has a brown coat, I administer fifteen grains hyd. cum creta, and follow it in six hours with seidlitz powder or citrate magnesia—a portion to be repeated every two hours until the bowels are moved.

For the prostration and failing strength, I give about two grains of quinine every four or five hours, or spts. vini gallici or old Bourbon whisky in tablespoonful doses every two, three or four hours, as the case may require.

I also insist upon the use of milk, animal broths, or other forms of nourishing food, from the commencement. If these cannot be taken, beef essence must be used.

As an external application to the inflamed and swollen parts,

I have found the following simple preparation the very best for its soothing effect merely, for I am convinced that no external application exerts any curative influence over the disease:

R. Plumb. Acetas, - - - - - dr. j.
Aqua, }
Glycerine, } - - - - - *aa.* oz. j.

The parts to be kept moist with this.

In from twenty-four to forty-eight hours, under this treatment, the violence of the disease is usually subdued.

I can present a long list of cases treated as above, all terminating favorably, a complete recovery being effected in from two to four or five days in every instance—and which results I have seen under no other treatment.

I regard the external application of blisters, nitrate of silver, tincture of iodine, corrosive sublimate, and all other irritating and corrosive substances, as not only useless, but positively injurious, inflicting unnecessary and severe punishment upon the patient, and wasting the strength as well. I do not believe in specifics in medicine, and yet I regard iodide of potassium in erysipelas as approximating one as nearly certainly as quinine in intermittent fever.

If in the above article I shall succeed in directing the medical profession to the faithful trial of this remedy in this affection, I shall feel I have rendered invaluable service to my race.

Office, 125 Clark St., Chicago.

Article VI. — *A Case of Death from Umbilical Hemorrhage.* Reported by Norman Bridge, M.D., Chicago.

The following notes are submitted, as adding one more case to the list of deaths from an unusual accident.

Mrs. F., aged about 42, in appearance large and robust, was delivered of her fourteenth child on January 3rd, 1873, after a labor of less than three hours. It was her belief that the time was a month short of full term. The child was small, but seemed healthy; it thrived until the 10th inst., the cord having shriveled and dropped off a day or two before.

I had not seen the case for several days, and was called hurriedly on the morning of the 10th, to find that the child had been bleeding from the umbilicus for six or more hours. All the bandages and clothing were saturated with blood, indicating the loss of several ounces. The child appeared thoroughly exsanguinated, and had a rapid and irregular pulse.

Powdered per-sulphate of iron was applied to the bleeding surface, and a thick compress bandaged tightly against it. There was ordered frequent doses of brandy.

No more bleeding occurred, but the child died during the afternoon.

The surface of the umbilicus was so much retracted that the particular vessels yielding the blood were not made out.

ARTICLE VII.—*J. Payne, D.D.S., on Amalgam Plugs.* By BURKE PILLSBURY, M.D., Duluth, Minn.

In the July number I find an article on "Poisoning from corrosive sublimate generated in the mouth from amalgam plugs in the teeth. By J. Payne, D.D.S." Your correspondent, it seems to me, takes a good deal of credit to himself for knowledge, which it is hardly to be expected that he, not being a medical man, should possess, and which in fact he does not seem to possess. When he makes such broad assertions he should offer some evidence of his acquaintance with the subject of which he treats, and while condemning an artificial filling in an old tooth as the cause of all earthly diseases, give us some satisfactory starting point. He mentions "twenty cases" he has had, "nearly all pronounced by physicians as consumption," leaving us to infer that they were otherwise, and so discovered by his superior skill and understanding. It would be interesting to his readers to know what means he and his rivals used in making their diagnoses. His symptoms are, "at times a very bad cough, eyes sunken, and haggard expression and deep blue or dark color under the eyes, invariably a metallic taste in the mouth, water flowing from the mouth in the night while asleep so as to wet the pillow, and in most cases extreme prostration"—any of which symptoms are common

attendants of disease, and mark nothing in particular. What person has not, in perfect health, while dreaming of food, had saliva flow from the mouth more or less copiously, and not possessing a single amalgam filling?

Then his theory of bichloride of mercury being formed from the decomposition of the salts of the saliva, is pretty far-fetched, and would require all Liebig's skill in the demonstration. Chloride of sodium and potassium exist in the saliva in the proportion of *eighty-seven one-hundredths of one part in a thousand*, and the proportion of mercury that would escape, if at all, would be so infinitely minute that a microscope aided by the faith of a homœopath would not discover it. In addition to this, any one acquainted with chemistry knows that a chloride and mercury will not combine by any such simple process as contact and a little warmth.

Selections.

Cancer of the Female Breast—its Character, Diagnosis, Prognosis and Treatment. Medical Library and Journal Association: Dr. John C. Peters, Pres., in the Chair.

Prof. Willard Parker remarked as follows:

In the latter part of the last century the man who was particularly connected with the study of this subject, cancerous tumors, was Dr. John Abernethy. Previous to his time, our knowledge upon this subject was in a state of confusion. So completely and successfully did he study this subject of tumors, that, in his time, the results of his investigations were regarded as the *ultimatum*. They were so generally accepted by the profession, that whoever was familiar with what Mr. Abernethy said upon the subject, was supposed to know all that could be known about tumors. These results of the investigations of Mr. Abernethy continued to control the minds of the profession, to a very great extent at least, until perhaps the last twenty-five years. Since that time great changes have taken place, which have grown more particularly out of investigations arising from the use of the microscope and from the researches of the histologists.

The first great departure was introduced by Bichat.

Bichat was the father of general anatomy, and was one of the brightest examples of a thorough scholar that France has ever pro-

duced. It was by the influence of his study that the human body was divided into its different systems—the muscular system, the vascular system, the nervous system, etc. In connection with his great work, the study of general anatomy, he took up the study of tumors. In his studies upon that subject, he observed that tumors were growths in the body, abnormal in character, that some of them had a character analogous to the original natural tissues, and that others varied somewhat from the original natural tissues. He observed, therefore, that there were two classes. One *like* the original normal structure, and the other *unlike* the original normal structure, and had a structure *sui generis*.

Bichat died in the year 1802. His pupils, Dupuytren, Andral, Cruvelhier, and others, seized upon this idea which Bichat had advanced, and made the two great classes of tumors with which the profession has been so familiar since their time. They divided tumors into two great classes, one which embraced that class of tumors which were composed of a structure analogous to the natural structures of the body, which they called homologues or homoplasts, and another which embraced that class of tumors which were composed of a structure which found no analogy in the body, which they called heterologues or heteroplasts. They farther observed that the first class were almost always mild in their effects, easily controlled by treatment, and they received the additional name of benign. They also observed that the second class were very apt to destroy life, sometimes very rapidly, were not easily controlled by treatment, and they received the name of malignant. This division of tumors was persisted in for a long time by the French, and it has been in France that the strong advocates of this classification have arisen. In the latter part of the life of Velpeau, that great surgeon began to question this matter of homology and heterology, as the terms had been used in this connection, but his studies and researches assumed no definite shape. The next class of men who attempted to give a solution to the question, What is cancer? were the chemists of France, and of these there were Thenard, Lassaigne, Vauqualin, and others of equal ability. These men made a careful analysis of cancer, with the view of discerning, if possible, something peculiar to cancer: something which perhaps might receive the name of *carcinomatine*, a distinct and fixed substance, the presence or absence of which might always enable us to say whether cancer was present or absent. After a long and careful research, they found that their labors were unsuccessful, and the work was allowed to pass from their hands, and it fell into the hands of the histologists. This class of observers have been diligent in their study, and faithful in looking for some change or modification of the cell-products, shape of cells, or presence of peculiar elements, by which they could distinguish cancer. For a long time it was thought that they had

succeeded in making the desired discovery, and the announcement was made that the esential element in cancerous growth was the presence of a certain shaped cell, which was immediately denominated the "cancer-cell." This announcement was very generally accepted by the profession as a solution to the long and vexing problem. It is only a few years since we all had faith that the so-called "cancer-cell," or morphosis, something distinct and definite in its character, which had been found, would enable us to determine whether any given growth was cancerous in its nature, or whether it was not cancerous in its nature. But the truth is, we now know that no one cell at present can be fastened upon as absolutely representing cancerous disease.

The "cancer-cell" theory belonged to the French.

The Germans, on the other hand, never acceded to this proposition, and for some time there was considerable discussion between French and German scholars upon this question. Among the Germans who engaged in this discussion were Virchow, Rokitansky, and others, who have since became pre-eminent in their profession. The study of this subject, however, has been followed up by Virchow particularly, and now we have the result of his investigations formulated and presented to us in his great work upon the pathology of tumors.

First of all he lays down the proposition that everything proceeds from a cell—

"*Omnis cellula e cellula.*"

For a time his opinion was that the embryonic connective-tissue cell had the power of proliferating the cancer-cell, that is, that the connective-tissue cell could produce a cell like itself, and also a cell of a different character, which was the cancerous product. But it now seems to be settled that like only begets like, and the doctrine that the connective tissue is capable of proliferating a cell of a distinct character, which can be called the cancer-cell, is regarded as not being tenable.

The doctrine is now, that the true cancer, so far as we rely upon the cell, is made up of cells which are of the epithelial type.

Failing to discover a peculiar cell by which cancer was to be recognized, both histological and pathological observers have at present settled down upon the point that true cancer is to be recognized by certain peculiarities in its anatomical structure. That is, we have in the first place a stroma made up of connective tissue; that in the interstices of this connective tissue, denominated alveoli, are deposited cells; that these cells are of the large, nucleated variety, and have for their prototype the epithelial cell. The presence of this anatomical arrangement is now regarded as evidence of the presence of true cancer. In other words, that nearly all cancers, if not all, have their origin in epithelial structure. This portion of the subject is one of great interest, and it is

to be hoped that, at some future period not far distant, the histologist and pathologist, by aid of the microscope and other means which they have at their command, may be able positively to determine and settle the question as to what changes have taken place in the growths which we now call cancerous. Virchow, pursuing the study still farther, as relating to the clinical history of these growths, has given us several stages.

1. The stage of development or local irritation.
2. The stage of granulation.
3. The stage of differentiation. That is, from being an apparently homogeneous structure, some of the cells go on to make muscular tissue, epithelial structure, etc.

Of these varieties of cells he distinguishes four; that is, cells which are to appear in four different kinds of structure.

1. Connective tissue.
2. Nerve structure.
3. Muscular structure.
4. Epithelium.

Continuing the stages he makes

4. The stage of maturity.
5. The stage of retrograde metamorphosis, or the stage when it has attained its maximum growth and begins to retrograde and die.

This process may take place by ulceration, suppuration, adipose change, and so on.

This embraces all the general remarks I have to make on the question, What is cancer?

Now, with regard to cancer of the female breast. There is hardly any organ in the human body so frequently the seat of this disease as is the female breast. Of course when cancer involves any important organ in the body it becomes the object of great solicitude on the part of the patient and the friends, and on the part of the surgeon a source of great anxiety, and, I am sorry to say, without any satisfactory results attending his efforts to give permanent relief.

In the first place, with regard to its frequency. Upon this point we have some very instructive tables furnished us by a French surgeon, who made his collection of cases during the eleven years immediately subsequent to the year 1830. The whole number of cases he collected, of all kinds, was 9,119.

Of these, 4,222 occurred in organs peculiar to the female sex, and only 48 occurred in organs peculiar to the male sex. This is in the proportion of 88 to 1. The reason for this extreme difference in frequency in the two sexes is not known.

Of the 4,222 cases which occurred in women, 2,996 cases occurred in the uterus; 1,147 in the mammæ; 64 in the ovaries; and 15 in the vagina.

Of the 48 cases which occurred in men, 21 cases occurred in the testes; 10 in the penis; 7 in the scrotum; 5 in the prostate; and 5 in the pap.

A remarkable feature of these observations is that so few cases occurred in the ovaries.

I propose now simply to refer to the cases which have fallen under my own observation. These are cases which I have either treated myself, or have seen in consultation. These observations and notes extend over a period of about 40 years, but the larger portion of these cases have occurred within the last 20 years.

I have upon my tables the record of 295 cases.

In making up these tables I have taken into consideration the following points:

1, date; 2, name; 3, age; 4, civil condition—married, single, or widow; 5, number of children; 6, which breast was involved; 7, family history; 8, personal history; 9, diagnosis, prognosis, treatment; 10, subsequent history.

First, with regard to age:—Average age, $48\frac{7}{10}$ years; oldest, 86 years; youngest, 28 years.

Civil condition:—Married, 190; widows, 53; single, 34; unknown, 18.

Number of children:—Mothers, 186.

Breast:—Right breast, 107; left breast, 130; axilla involved, 71.

It will be noticed that there is a difference of 23 in favor of the right breast. I have also found that the same result has been obtained upon this point by other observers. I can assign no reason why its occurrence should be so much more frequent in the left breast than in the right.

Family history:—Cancer taint, 28; no cancer taint, 208; consumption, 35; consumption and cancer taint, 5; unknown, 36.

It will be noticed here that by far the larger portion occurred in persons who had no history of cancer taint. So far, then, as my tables go, they prove that cancer is not a hereditary disease, which is contrary to the opinion I had always entertained previous to a more thorough examination of the question.

Personal history:—Blows, 38; injury from breastpump, 1; injury from tight dress, 2; inverted nipples, 2; uterine sympathy, 19; mental anxiety, 45; commencing benignant (op. 17), 31; commencing malignant, but living long (op. 14), 15; sloughing and living long (op. 3), 6; cystic (av. age, $57\frac{1}{3}$—oldest, 72, youngest, 33), 9; metastatic, 3.

With regard to the 19 cases which occurred from uterine sympathy, they belonged to that class of cases which formerly were called the irritable tumor of the breast. These cases not uncommonly occur in connection with dysmenorrhœa, and the leading symptoms are swelling and pain in the breast and nipples before menstruation.

I wish to call special attention to the 45 cases marked mental anxiety as a cause for their development. I believe this to be an important point in connection with the development of cancer in the female breast. I believe it is very rare for cancer to present itself where everything passes pleasantly and prosperously in life, and cheerfulness at all times surrounds the individual. I find in many cases, that the development of cancer dates at something which has caused mental anxiety, such as loss of property, loss of friends, long-continued sickness in families, giving rise to great mental solicitude and physical fatigue, etc., etc.

In addition to the above general features, I find that I have the record of 31 cases which began as benign tumors. In this class of cases the tumors had been carried from 10 to 30 years without inconvenience, but suddenly from some cause, mental anxiety being a prominent cause, these tumors commenced to grow rapidly and assume a malignant form. One of these cases I now recall, in whom the tumor had existed from early womanhood. That lady was married when 20 years old, bore two children, her husband was prosperous in life, but suddenly distress in life came from reverse in fortune; and during these dark hours in her history, the tumor took on changes which developed into a rapidly advancing cancerous growth. The tumor was twice removed, but no permanent relief ensued.

Another case was one in which the patient carried the tumor 35 or 40 years without inconvenience, when suddenly the tumor took on new action, and the woman died from the effects of cancerous disease within six years from the time of the manifestation of this new action.

I have another group of cases which began as malignant. They are 15 in number. Of these cases, 14 were operated upon, and remained non-progressive for a long time. These are the cases which have afforded the greatest success in treatment. The following is a condensed statement of the history of these cases subsequent to the operation:—

1. Lived 12 years, and died with cancer of liver.
2. At the end of 27 years was in fair health.
3. Lived several years, and died from accidental injuries.
4. Patient well 22 years after operation. The patient had an issue made in the arm.
5. Lived 36 years, and died of other disease.
6. Patient well 5 years after operation.
7. Patient well 8 years after operation.
8. Patient well 10 years after operation.
9. Patient was operated upon in 1856, disease returned in 1873, but is not active.
10. Living and well 20 years after operation.
11. Living and well 3 years after operation.

12. Lived 7 years after the first operation. This patient had the second operation.

13. Patient living in 1873, 10 years after first seen, and she had no operation.

14. Disease returned 2 years after operation, after great depression of spirits.

I have another group of cases which took on the sloughing process; those in which ulceration and sloughing took place rapidly and continued.

In this group are six cases. Of these, three were operated upon and three were not.

Of the cases in which no operation was performed—

1. Three years' duration, and patient lived 6 years after the sloughing commenced.

2. Nine years' duration, had been ulcerating 3 years, general health unimpaired.

3. Thirty-eight years' duration, and had been sloughing for 10 years.

Of the cases in which operation was performed—

1. Lived 5 years.

2. Operation 12 years ago, patient still living.

3. Patient well 10 years after operation.

This last case was indeed a most remarkable one. When first called to see the lady, I found her in what was apparently an exceedingly unfavorable condition. There was a large sloughing, cancerous mass upon the thorax, which filled the house with the most terribly disgusting odors which emanate from such sloughing masses. The glands in the axilla were not involved. There was no trouble above the clavicle. Operation was resorted to, simply to relieve the patient of the presence of this mass of death. There was no promise whatever of hope in the case. The operation was performed ten years ago, and the patient is still living and in good condition. These sloughing cases, when the surrounding parts are not involved, are to be regarded as favorable cases for an operation, rather than unfavorable. The fact of sloughing should have but little weight in deciding for or against the operation, but if anything, it is to be regarded as favorable.

Another group of cases of which I have taken note belongs to the so-called cystic variety.

Of these cases I have nine. Three of these cases were operated upon, but only one is now known to be living. In that case, cancer taint was present in the family. The patient is now living, ten years after the operation. What is meant by cystic cancer is, that they are tumors containing fluid, and the walls of these cysts or the walls of the tumor contain cancerous structure.

These cases are quite favorable for operation. The common cause for their occurrence is blows.

There is another class which has been denominated metastatic cancer. Properly speaking this term does not express what is understood by these cases. What is understood by the term is, that the disease has ceased its activity in one organ of the body and made its appearance in some other organ of the body. The organs most commonly affected in this way are the uterus and the mammæ.

One case I call to mind, as illustrating this change, occurred in a woman who had cancer of the breast at the age of 54, which subsided in its growth, and at the age of 76 it appeared in the uterus, and was there the immediate cause of the patient's death. I have seen two of these cases in which the transition of the disease was from the breast to the uterus, and one in which the transition was from the uterus to the breast. As a general rule, the constitutional disturbance in these cases is but little, and the patients are generally able to attend to the common duties of life apparently in a very comfortable condition. I will now say a few words with regard to the

FORMS OF CANCER.

Of these we have, speaking particularly of the breast—

First—Those beginning as a turbercle in the skin.

Second—Those beginning as an ulcer on the nipple. These begin very much as does the epithelial cancer of the lip.

Third—Circumscribed. This form occurs more commonly in young persons, usually in fat persons, and is of rapid development. Sometimes this form involves one lobe, sometimes several lobes of the breast, and is something corresponding to the so-called encephaloid form.

Fourth—The infiltrated form, or scirrhus. This usually returns very soon after operation, very rapidly involves the lymphatics, and is seen very often in the skin. The disease makes its appearance in the skin in the form of small lenticular masses, sometimes called tubercles in the skin.

Fifth—Cystic. This form is usually found in persons past the middle period of life.

Sixth—The sloughing variety.

DIAGNOSIS.

Under this head I shall say but very little, for the manner of arriving at a positive diagnosis in these cases you are already familiar with.

I will simply remark, in passing, that the first form, the tubercle, is sometimes mistaken for syphilis. In the skin the appearance is very much like the epithelioma of the lip. The third form is very apt to be mistaken for *fungous hæmatodes*. It is perhaps as near to fungous hæmatodes as occurs in the breast. The fourth

form is usually recognized by the pain and retraction of the nipple. The fifth form might raise the question of hydatids of the breast. Hydatids of the breast are exceedingly rare. I have never seen a case. When I find a smooth tumor in the breast filled with fluid, I regard it as being either of the encephaloid or cystic variety of the disease, and the diagnosis between these two is sometimes difficult. The presence or absence of fluctuation and the microscopical evidence are the most reliable.

PROGNOSIS.

First—Prognosis is always unfavorable.

Second—In tumors commencing benign, prognosis is most favorable.

Third—In sloughy tumors, prognosis is more favorable after an operation.

Fourth—In cystic tumors, prognosis is more favorable for an operation, and removal of the tumor is advised.

Fifth—In tumors which commence malignant, the patients usually die within two years. Sometimes they continue a little longer. Yet of tumors commencing malignant I have 14 cases where the patients lived many years after amputation of the breast.

Sixth—Prognosis may be affected somewhat by the method of treatment employed. Hence we have prognosis after compression, electrolysis, caustics and internal treatment, and these will be more particularly spoken of under the head of

TREATMENT.

With regard to treatment, again, I have not much to say. The methods employed may be embraced under the following heads:—

1. Amputation; 2. Caustic applications; 3. Compression; 4. Electrolysis; 5. Medication; 6. Moral treatment.

In the superficial cancer of the breast it is very well to use caustics. The same thing may be said with regard to cancers upon the face. The treatment with caustics in that region is good surgery. When the tumor is situated to any extent below the surface, the idea of caustics is bad surgery.

In two cases which have come under my observation, one died within four days, poisoned by the material used for the caustic application, and the other never reached her home alive.

With regard to the treatment by the use of compression, compressed sponges being usually employed, I have seen no good from it.

With regard to electrolysis, I have seen nothing in it yet to give me any confidence whatever in its use. I have nothing, however, to say against its use. There may be something of value in it, and it should be thoroughly tried. The day was when no knowledge was had with regard to a successful method for the treatment of

syphilis, but now we know that by the proper use of proper remedies, that disease can be cured, and charlatanism has left that field almost entirely. With regard to the internal treatment of cancer, I believe very much in it.

INTERNAL REMEDIES.

I believe that the day must come when something will be accomplished by the aid of internal remedies. Of the remedies now used, arsenic is perhaps the one which commands my confidence more than any other. There is another point in the treatment of cancer which I conceive to be of great importance, and that is, the moral condition of the patient. I believe that it is impossible to cure our patients of cancer unless they are buoyed up by hope. Their surroundings should be of a character that will give them the greatest possible amount of comfort and happiness. Keep them in the sunlight of enjoyment, for darkness is the soil in which cancer flourishes.

THE QUESTION OF OPERATION.

Now we come to consider an important question: Do we accomplish any good by operations?

There are some who say, Never operate. I think this opinion comes from the older members of the profession, who are inclined to look beyond the simple performance of the operation. The younger men, many of them, say, Operate. Upon this question I perhaps can do no better than to refer you to the opinions of two men who are among the most experienced of the profession, and who have had abundant facilities for making observations. I refer to Paget and Sibley, both of London.

Mr. Paget has shown, from his statistics, that the average length of life after an operation is 43 months, and that the average length of life without an operation is 55 months. Mr. Sibley has shown from his statistics that the average length of life after an operation is 53 months, and that the average length of life without an operation is $32\frac{1}{4}$ months. Here are the results of observations made by two distinguished authorities. I think all that I am justified in saying upon this point is, that every case must be taken by itself, looked at with all its surroundings, before a decision is given either for or against an operation.

The dangers in an operation are not great, if it is decided to perform it.

The following may be regarded as the indications, when attempting to decide upon any given case.

The older the patient, other things being equal, the more favorable for operation. If the cancer has extended so that we have secondary cancer, it is not surgical to operate. Therefore, when the axillary glands are involved, or when the skin is involved, and

we have the local and constitutional disease both existing, I regard it as unfavorable for an operation. When the tumor is isolated, and there are no secondary manifestations, the conditions are favorable for an operation, and the sooner it is performed the better is the chance of preserving the life of the patient.

If a patient comes complaining of an irritable tumor of the breast, apparently connected with some disorder of menstruation, I should recommend, first, careful attention to the general health; and second, if found increasing in size, to remove it at once. There is another condition in which I would operate, and that is in the sloughing cases. Then it is done simply to make the patient more comfortable. Practically speaking, these cases do not belong to secondary cancer, and the operations are not unfavorable. But with all these cases we must use our own discretion. Select the cases, and give them the benefits and advantages of an operation.

Now a few words with regard to the hereditary character of cancer. In the cases which are found in my tables, the cancer taint was present in only 28 of the whole number, 236, whose history upon this point was obtained.

Within the last year I have been examining the Register's Bureau of Statistics in this city, and I find, in a period of time extending over about 70 weeks, there were only 532 deaths from cancer of all kinds and in all organs, while from pulmonary consumption alone there were 6,219 deaths, or as 1 to 11½. When compared with Bright's disease it is found that about three times as many die from that disease as from cancer. From the statistics of the Register's office for the last five years, the following proportion of Americans and foreigners who died of cancer are found:—

Americans, 68; foreigners, 154; negroes, 5. Savages rarely have the disease.

It would seem as if this disease of the breast is found in certain conditions of life, and that in these conditions it is upon the increase.

Without pursuing the discussion of this subject farther, I will close by saying, that the conclusions to which I have arrived are chiefly as follows:—

1. That the disease is not hereditary, or if so, only in a very limited degree.

2. That the disease begins as a local disease positively and purely. It becomes constitutional, just as syphilis begins a local disease and becomes constitutional.

3. That the disease occurs in those of vigorous health, instead of being connected with those conditions in which consumption occurs.

4. That cancerous parents may beget tuberculous offspring. That is, feeble constitutions arising from the effects of cancer will not beget cancer, but the diseases which follow in their line are tuberculous.

5. That the moral condition has a powerful influence on the development or the prevention of the development of cancer.

6. I am very forcibly struck by the parallelism and analogy existing between cancer and syphilis. Both begin by local irritation. Syphilis is inoculable, but cancer has not been proven so to be. In this respect they differ from each other. We have secondary syphilis, and we have secondary cancer. We have tertiary syphilis but perhaps it cannot be said that we have tertiary cancer, unless it can be said that cancer is tertiary when it affects the bones, as it sometimes does.

In conclusion, I have to say, that we must not give this subject over as an unprofitable one for study and observation. Many diseases have run rampant which finally have been made to yield to treatment, and we may hope that the same thing may yet be accomplished with reference to cancer. The work of the histologist and pathologist may yet bring us into the light, and the day may come when we can say of cancer, as we now can say of syphilis, It can be cured.

Dr. Fordyce Barker: Mr. President, my apology for departing from my usual rule with regard to surgical questions and operations is, that I may perhaps suggest some new fields for inquiry and observation, and perhaps bring out some new ideas in the course of the discussion by these suggestions. In regard to surgery, I am no expert. I do not pretend even to interfere with it, and it is therefore somewhat embarrassing to speak upon a subject which really belongs to the surgical department. I have, however, had occasion to study the subject of cancer with great interest, and perhaps with a large experience, and have, therefore, for many years taken every pains to inform myself with regard to the progress of science, and have felt an interest in its bearing upon the question of its manifestation in the form in which it occurs secondarily, which in its most frequent form is in that of cancer of the breast.

In alluding to certain points in connection with the general subject, I will refer to one or two cases in connection with my own personal experience. Previous to my coming to this city, I was obliged to practice more or less in general surgery, and in the course of that time I was called upon to amputate the breast thirteen times, for what I supposed to be cancer of that organ. I have listened to the statistics from the gentleman who has already occupied your attention, with great interest and with great pleasure, because, in almost every point, while they have not corresponded with published statistics as we now have them, they have corresponded with my own. In four of these thirteen cases in which I operated for cancer of the breast, I know nothing of the results. Two of the thirteen cases are still living. All of the seven remain-

ing cases died at periods varying from eighteen months to four years after the operation. A curious point in relation to them was, that the one who lived the longest—and this point I have not seen alluded to by any author—was the patient who was the oldest. That patient was 71 years of age when I operated, and had been afflicted with the disease some four or five months when I first saw her.

There was no apparent return of the disease until several months afterwards, and then there was probably a return of the disease to some internal organ. The point is this: whether the progress of pathological changes is not exactly in the same ratio as the metamorphosis of tissue in relation to age; whether in persons of advanced life we may not account in this way for the longer exemption from a fatal termination of the disease than when the disease occurs in those who are less advanced in age.

In 1858, although I had refused to have anything to do with general surgery, and confined my operations entirely to the obstetrical department, I had one patient who absolutely refused to permit any one else to operate upon her except myself. I accordingly removed her breast. The axillary glands were not involved, but the disease returned within a very few months, and the patient died eleven months after the operation.

The second case which I will refer to is a rather curious and rather exceptional one. It occurred in the year 1860, in a lady 43 years of age, and she had had the disease for several months when I first saw her, and in what I regarded as a very malignant form. That person, again, utterly refused to have an operation performed unless I would perform it myself, and I accordingly performed the operation, assisted by Dr. Foster Swift and Dr. Charles Phelps. In that case acupressure was employed, as I believe, for the first time in this city, and I was very much interested and pleased with the effect of acupressure in diminishing the amount of suppuration, which in that case was very slight indeed. That patient was operated upon in April, 1860. In my own belief, and in the belief of the microscopist, it was one of the most malignant forms of this disease of the breast, and yet the woman was alive in 1871. I simply mention this case as a small contribution to the number of successful operations, in the sense of curative, in cases of carcinoma of the breast. That specimen was afterwards presented at the New York Pathological Society, and the minutes of the meeting, which were published in the *Medical Record*, represented it as being presented by Dr. Swift and that the operation had been performed by Dr. Parker, which is a fair illustration of the uncertainty of surgical glory. With regard to statistics in determining whether a surgical operation shall be performed or not, most modern writers agree that operations do, in a certain proportion of cases which are judiciously selected, absolutely and positively

prolong life, relieve suffering, and in some cases actually save life. The diametrical opposition which the statistics of some surgeons have to those of other surgeons who are equally well situated for making observations, may perhaps be explained in this way. One surgeon may be of the opinion that the disease is, primarily, always a local disease, and that its constitutional character is secondary to the local disease, which manifests itself differently in different cases. If this theory be correct, the proper method of treatment is the early extirpation of all suspicious-looking growths. On the other hand, other surgeons are of the opinion that the disease is a constitutional disease; that operations are deleterious in their effects, and should not be resorted to until all other means have failed to arrest its progress.

Again, some surgeons who have a greater fondness for operations than others, will remove a suspicious-looking growth much earlier than those surgeons who are less fond of operations, so that in some cases it may be that the delay in the performance of the operation has permitted the disease to make such extensive ravages upon the general system, that the operation, if performed at all, can only be performed with the expectation of giving some relief from distressing symptoms.

I began in early life as a most enthusiastic believer in the numerical system, regarding it as a most efficient means for advancing our knowledge of disease. But my experience has proven to me that statistics which ordinarily receive publication are extremely unreliable, and that they form a most unstable foundation upon which to predicate future action, whether it shall be for the formation of an opinion or made the basis of an operation. The statistics which the author of the paper has given us relative to the comparative frequency of cancer of the breast singularly accord with the statistics taken from the cancer hospitals in the city of London. Out of 7,800 cases which were under treatment in that city between the years 1851 and 1861, 4,388 were cancer of the breast. This is from an entirely different sphere of observation, and yet the result of the observation shows that the female breast is one of the most favorite places in the human body for the development of this disease. It seems to have an elective affinity for the female breast, and perhaps in the progress of etiology and the science of physiology the reason for this elective affinity will be discovered.

The next point which I will notice in connection with the paper, is with regard to hereditary predisposition to the disease. I feel quite confident that I should never have read a paper which I did read, and which was published by the Academy of Medicine, upon "The Clinical Study of Cancer of the Uterus," had I not been thoroughly convinced upon this point. When I came to study my own observations, I found that some of them were so different

from the published statements in published works that I felt doubtful about reading them without consultation with some of my personal friends. My own statistics with regard to hereditary predisposition to cancer of the uterus almost exactly correspond to the observations of the author of this paper with regard to hereditary predisposition to cancer of the female breast.

Another very interesting point to me was, that the author of the paper has found so much larger proportion of cases of cancer of the breast where hereditary predisposition to cancer was entirely absent, but where hereditary predisposition to tubercles was present. The results of his observations upon this point give the same relations which are found in my own statistics, and I believe that the idea of hereditary predisposition to cancer should be denounced, and that this denunciation should be pronounced boldly by physicians.

There were a few points to which no allusions were made, and concerning which I wish to make some inquiry.

What is meant by a cancerous cachexia? In my earlier experience I was always looking for something like a cancerous cachexia, but my later experience and observation have taught me to become a non-believer, and I do not now believe at all in cancerous cachexia, as the term is commonly used. I have seen patients in the most advanced stages of cancer of the uterus, and in almost all its various phases, when they presented the appearance of robust health. The cachexia, when it does appear, is to my mind not a measure of the influence which has been produced by the simple presence of cancer in the system, but rather from associated lesions of the various organs of the body.

These are my observations with regard to cancer of the uterus, and I should like to know whether the same thing has been observed with regard to cancer of the breast.

Another point, which was not alluded to, and concerning which I should be pleased to gain some information, is, with regard to the value of pain as a symptom in cancer. I am of the opinion that it is a symptom of uncertain value in aiding us in determining the existence or non-existence of cancer of the uterus. I have seen patients in the advanced stages of the disease without the slightest suspicion having been raised with reference to the presence of the disease by any pain. My own opinion is, that pain is simply a measure of the influence which the disease has had upon the contiguous and adjacent tissues. Cancer may occur so as to interfere with the functions of the uterus, or affect the subperitoneal tissues; and when these tissues are affected we are sure to have pain, and in some of these cases the pain is most atrocious. In other cases, where the disease presents more malignancy, the pain is sometimes very trivial. Whether the amount of pain is in relation to the amount of influence which the disease has upon the

adjacent and contiguous tissues, I am not able to say, but simply throw it out as a question for consideration.

From time immemorial there has been an attempt made to destroy cancer by the use of every variety of known caustics. It has been a favorite resort of empiricism, and the most successful and perhaps the most lucrative of all charlatanism has been seen in the use of caustic agents to destroy the local manifestations of cancer. As a consequence of this, of course, a great majority of the surgical world have been satisfied with regard to the uselessness of such attempts. My own prejudices have always been against this method of treatment. I once attempted to make some observations respecting this plan of treatment as it was then adopted in St. Bartholomew's Hospital, and the whole process was so revolting that I did not pursue my investigations farther, and the result of my observations was not at all favorable.

In the year 1870, however, I was consulted by a lady who had a tumor in the breast which was very suspicious in its character, and which I watched for some weeks, when I regarded it as cancer, and urged upon my patient the importance of having it removed at once. But that patient utterly refused to have any cutting operation performed. At that time I had been studying up the subject somewhat, and among other works which I had read was Marsden's work upon the use of caustics in the treatment of cancer.

The same summer, while abroad, I visited the hospital in which Dr. Marsden had made his observations and applied his treatment, and saw the results of this treatment. I became so much interested in this plan of treatment and was so highly pleased with it, that, upon my return, I recommended to my patient to submit to the treatment by the use of caustics. After some delay she consented. The form of cancer from which she was suffering was apparently of the most malignant type, and at the time I commenced the treatment the mass was about two inches in diameter, which is the extreme limit in size permissible to be treated by this method. In the course of eighteen days after the first application was made, the mass came away, the process of cicatrization was completed in a short time, and there has not been the slightest appearance of return up to this time.

Another case to which I wish to make reference, was in a patient who had had two sisters die with cancer of the breast, but her father and mother were still living at the time she consulted me. Not the slightest suspicion of cancer could be traced in either member of the family. One sister died some six or seven years ago from cancer of the breast. The other sister I was called to visit, and I found the axillary glands involved in the disease; there were evidences of what is known as the cancerous cachexia, and I called for council. Dr. Van Buren was called in consultation, but the case was regarded as utterly hopeless, and the patient died without an operation.

The third sister came under my observation for epithelioma of the uterus. That patient I operated upon in 1866, removing the cervix uteri by amputation. It is now seven years since the operation was performed, and she remains in the most perfect health.

About five years ago a lady consulted me with regard to a suspicious-looking tumor in her right breast. She was under my observation for about two years, and received treatment, but I never was of the opinion that the growth was malignant. At the end of two years it entirely disappeared. In February, 1873, that patient came back to me with a tumor in her left breast, which I regarded as true cancer of the breast. The tumor had been observed for more than a year, and when I saw it, the nature of the case seemed clear and positive. Its removal was recommended. Consultation was held, to satisfy the patient with regard to its nature, the propriety of its removal, and if decided to remove it, how it should be removed. It was decided to remove the tumor by Marsden's treatment, and the treatment was accordingly commenced upon the first day of April. The amount of pain which the patient has suffered during the course of the treatment has been very insignificant indeed. She has been up most of the time, has been able to be out riding some of the time, and it is now eighteen days since the first application, and the slough is just ready to come away. The treatment of this case thus far has been very pleasant. What the result of the case may be it is impossible at present to decide.

I will now describe the plan of treatment as given by Dr. Marsden—the plan which he professes to have derived great success from, not only in a very considerable number of cases of cancer of the breast, but in the treatment of cancer of various parts of the body, and even of cancer of the neck of the uterus.

This method of treatment is limited to cases in which the surface of the tumor does not extend over two inches. Care must be taken that the paste is of sufficient consistence so as not to flow beyond the point to which it is applied. The general formula for the preparation of the caustic is to combine arsenious acid and mucilage in such quantities as to make a thick paste, and the formula commonly employed for this purpose is—

R. Arsenious Acid, - - - - - - dr. ij.
Mucilage, - - - - - - - dr. j.

This paste is spread over the surface of the tumor, and two or three layers of lint spread over that. The lint absorbs all the surplus paste and protects from farther cauterization. The first application is left on for twenty-four or forty-eight hours, according to the extent of surface, and then removed by gently soaking it with warm water. After the old paste has been removed in this way, one judges from the impression made with regard to a farther

application of the caustic. These applications are to be continued until a line of demarcation entirely surrounding the diseased structure is shown. Then the lint is soaked and removed, and a bread-and-water poultice applied, and changed every few hours. At first there is sometimes considerable inflammatory action set up, but the amount of pain is very inconsiderable as compared with the use of the knife, and the process of cicatrization is equally painless and satisfactory.

The shock to the system, as a rule, is very much less. The constitutional effect of the arsenic in this case was very slight, lasting only a few hours, and then passed away. Indeed, the moderate constitutional effect of arsenic I have long believed to have a certain positiveness in the treatment of cancer, in that it retards the proliferation of cancerous tissue. I mention these cases with the hope that it may contribute something to our knowledge of means by which we may meet this most terrific disease.

Dr. Sands: Mr. President, I shall merely call the attention of the Association to a few points in connection with the nature of cancer, the classification of cancer, the etiology of cancer, and the treatment of cancer. I am more and more convinced, until surgeons can have the aid of the pathologists, until they can work together in the investigation of malignant growths, that but little advance can be made with regard to the important subject of the therapeutics of cancer.

It is a fact with which we are all familiar, that at the present time various kinds of tumors are removed from the body, and the most varying opinions are expressed with regard to these cases. It is not long since that I removed a female breast, and one surgeon who was present expressed the opinion that it did not need any microscope to enable him to determine that it was cancerous; but a microscopical examination proved it to be a case of pure adenoma of the breast. I think that most surgeons, as well as pathologists, are willing to give an anatomical rather than clinical meaning to the term cancer. The term cancer can no longer be considered synonymous with malignancy. All cancerous tumors are malignant, it is true; but, on the other hand, there are many tumors which are malignant in their nature, to which the term cancer cannot be applied, because they have not the anatomy of the tumors described under that term. Among these we have the sarcomata, myxomata, epitheliomata, lymphomata, and some others. If we are to make any progress in our investigation of this subject of tumors, each tumor should be examined immediately, with the view of determining the true anatomical elements of which it is made up.

With regard to the etiology of cancer, of course it is very interesting and important to determine whether cancer is, or is

not, a local disease, whether the condition of the patient is always consequent upon a constitutional taint, or whether it is simply a symptom incident to a local morbid state. Different views have already been given upon this point; and in favor of its being a local disease primarily, there is a degree of plausibility, when we go a certain distance. The occurrence of cancer secondarily can be explained in this way, when it occurs in or near the original seat of the disease. But it does not so easily explain the occurrence of cancer in parts *remote* from the original seat of the disease. In illustration of this point is the following case:

I had a patient under observation who was suffering from primary melanotic cancer of the lymphatic glands in the axilla. The diseased glands were removed, and the patient had a good recovery, but afterwards suffered from secondary cancer of the scalp. In the latter situation the disease was identical with that of the lymphatic glands in the axilla.

Another case illustrating the same point occurred in a person from whom I removed, about eighteen months ago, a small epithelioma of the face. Dr. Parker had removed a similiar growth from the same situation before. This gentleman made a good recovery, but he is now suffering from epithelioma of the rectum, and is rapidly declining in health. I have still another case, where it is yet more difficult to explain the secondary occurrence of the disease upon the theory that cancerous tumors are transplanted. That case was seen in St. Luke's Hospital, and was a small tumor which occurred in the left ventricle of the larynx. The tumor was removed, and the patient made a good recovery. The disease was never reproduced in the original locality. The nature of the tumor was determined by microscopical examination to be cancerous. About eighteen months subsequent to the operation, the patient again entered the same hospital, and died twenty-two months after the original operation. When post-mortem was made, cancerous disease was found in the suprarenal capsules of both sides and one ureter. It would seem hardly possible to explain this case upon the theory that secondary cancers are always the result of primary cancers; and all these cases which I have mentioned go very much to show that cancer is a constitutional and not a local disease. Some surgeons go so far as to say that all tumors are expressions of constitutional disease. It is a well-known fact that, in some cases, benign tumors are so numerous that their occurrence in such numbers can only be explained upon the theory that they are dependent upon some constitutional cause.

With regard to hereditary tendency of cancer, Dr. Parker's statistics are very gratifying; but there are some facts which I think show that in some cases, at least, cancer can be inherited. Cases like the following would seem to indicate that the disease has a hereditary tendency. In that case autopsy demonstrated that the

gentleman died from cancer of the stomach, and not long afterwards a son of the same gentleman died with cancer of the same organ. I have already in mind several cases equally well marked, which it seems to me clearly indicate that the disease has a hereditary tendency. With regard to the treatment of the disease, I have had no experience with reference to the use of caustics. I have, however, a very decided conviction that the knife is the remedy, so far as there is a remedy in this disease. I do not believe that cancer is purely a local disease, yet if the knife can be applied early, and remove not only all the tissue of the disease, but the tissues about the disease, there may be a chance for a long interval before a return of the disease, in some cases.

The reasons why I would advocate the treatment of cancer by operation with the knife are chiefly threefold. One is, that the nature of the tumor cannot be determined prior to its removal. Another reason is, that it now and then happens that a tumor of undoubted malignancy is cured by this surgical operation. Finally, I think an operation is justifiable often upon the ground of expediency. The chances are increased, if the patients die from cancerous disease, that they will die not from the external progress of the cancer, but that they will die from cancer of some of the internal organs. It is very well known that the return of the disease is very often upon the internal organs after the external disease has been removed, especially upon the lungs, and a death from cancer of the internal organs is not so painful and not absolutely loathsome, as when permitted to pursue its ordinary course externally.

Dr. Buck related the history of a case of cancer cured in the person of a lady about 40 years of age. The tumor was in the breast, and possessed all the characteristics of scirrhus. It was removed, and more than 30 years after the operation it was ascertained that the patient was yet living and in comfortable health.

Another creditable case was in a lady who was very timid and despondent. One determining point in this case was, to perform an operation in order to infuse hope into the mind of the patient with regard to her recovery. She did make a favorable recovery, and subsequently returned to France. That lady was well for two years, and I was fully convinced that she would not have survived as long as that without the operation. In these days of anæsthetics we may more readily advise an operation, for the patients are entitled to the respite of hope and comparative comfort which may be more than an equivalent for the fears and sufferings which they may experience without the operation.

With regard to operating for the removal of cancerous breasts in very corpulent persons, my experience has been very discouraging. I always dislike to perform an operation upon such patients, for in

some cases which I have seen their life is drained away, as it were, from the wound.

Dr. Thompson: Mr. President, upon perusing the records of the New York Pathological Society, from 1845 to the present time, I find that 55 cases of carcinoma of the stomach have been reported by various surgeons, of which Dr. Parker reported four. The first case was reported by the President of this Association, Dec. 24, 1845.

Of those 55 cases, 23 were males and 18 females.

In fourteen cases the age of the patient was not reported. The average age of the cases reported was $49\frac{1}{8}$ years, which is a little above the average age of Dr. Parker's cases, which he reports at $48\frac{7}{10}$ years.

Remarks by the President. — Gentlemen and Associates: We may well congratulate ourselves upon the results of this evening's investigations and discussion. We have become better acquainted with the real nature of cancer of the breast, and with those hygienic, therapeutic and operative means which will not only delay its progress and mitigate its dire effects, but which may in a certain number of cases remove it entirely.

The time has now arrived when its treatment is removed from all empiricism, and the regular profession is in possession of means which will accomplish vastly more for the sufferer than any boasted specifics, or any irregular or mysterious practice.

We now know that cancer of the breast is generally a simple and local, not a constitutional or hereditary affection. It is a mere excessive growth and proliferation of normal epithelium. The first change is a large accumulation of epithelium within the ducts of the gland, just as in ordinary adenoma. But soon the walls of the ducts are not only invaded by epithelium, but this is also found outside the ducts amongst the inter- and peri-glandular connective tissues, which in their turn are thrown into a state of active proliferation, and become infiltrated with small round cells. Now, we have every reason to believe, from the vast experience of Weeden Cooke, that the muriate tincture of iron and other mineral astringents will arrest these processes in their incipiency, and much delay them in their advanced stages.

We also know that the epithelial cancer-cells are not cemented together by any intercellular substance, and that the lymphatics communicate with the alveoli in which the loose and detached cells are contained. The mineral astringents will prevent the absorption of the infecting cells into the lymphatics, and the further contamination of the system.

If the disease be farther advanced, we have every reason to believe that Marsden's and Cooke's pastes will accomplish more than any caustic vaunted by quacks.

Finally, with proper precautions, it has been proved that the knife may often be used very successfully. There is an active and passive stage of cancer; and when the tumor is removed in its active condition the constitution resents this premature interference, and the disease returns rapidly after the operation. The local soothing measures recommended by Weeden Cooke should be used until the tumor has ceased to grow, and then exsection may be performed with safety.—*New York Med. Record.*

Notes on the Pneumogastric. By J. F. Alleyne Adams, M.D., Pittsfield. Read before the Massachusetts Medical Society, June 3, 1873.

In presenting to the Society a brief paper upon the functions of the pneumogastric nerve, and their bearing upon the etiology and treatment of certain forms of disease, a few remarks will be offered, by way of introduction, upon the anatomical relations of the pneumogastric to the other cranial nerves.

By the classification of Soemmering, the pneumogastrics constitute the *tenth* pair, and by that of Willis a portion of the *eighth*. The more scientific classification of Muller calls the pneumogastric, with the glosso-pharyngeal and spinal accessory, the *second* pair of cranial nerves, the third, fourth, fifth and sixth of Willis, with the portio dura of the seventh, being grouped together to form the first, while the hypoglossal is the third. This arrangement is more in accordance with the teachings of philosophical anatomy, inasmuch as it harmonizes the nerves with the vertebrate type of the skull, giving one pair for each of the three cranial segments. It leaves out of the question the three nerves of special sense, viz., olfactory, optic and auditory, which are demonstrated by Oken to have no true nerve structure, but to be mere outgrowths or appendages of the brain. But Muller's classification does not complete the homology between the cranial and spinal nerves, for the third pair has no sensitive root, and the distribution of both the second and third is greatly at variance with the anatomical relations of the vertebræ to which they respectively belong.

Dalton* proposes a fourth classification, which is identical with Muller's, excepting that the hypoglossal is put with the glosso-pharyngeal to form the second, while the pneumogastric and spinal accessory constitute the third. Although suggested by him on purely physiological grounds, this arrangement commends itself, as well, from an anatomical point of view; and there are strong arguments in favor of its adoption as the true classification of the cranial nerves.

* Dalton's Human Physiology, p. 432.

These arguments may, for convenience, be arranged under the three following heads:

1st, Origin; 2nd, Distribution; 3rd, Function.

1st. *Origin.* All of the cranial nerves, excepting the three nerves of special sense mentioned above, have their deep origin in the medulla oblongata, and are arranged in the following order: from its upper portion arise, in close proximity, the trigeminus, the facial, motor oculi, abducens and patheticus; then comes the glosso-pharyngeal, next below which is the deep origin of the hypoglossus; below this is the vagus, and, lastly, the accessorius. Thus we see that the hypoglossus, although having its origin on the same level as the vagus, and anterior to it, really rises above that nerve, and close to the origin of the glosso-pharyngeus. Arguing from the deep origin, therefore, there is no propriety in calling the hypoglossus the last of the cranial nerves.

2nd. *Distribution.* The several nerves grouped together as the first pair are distributed chiefly to the frontal segment, including its inferior or hæmal arch, the inferior maxilla. The second, or parietal segment, has for its hæmal arch the styloid processes and hyoid bone; and we find the glosso-pharyngeus and hypoglossus distributed to the tongue and pharynx, parts intimately connected with these bones. The third, or occipital segment, by an adaptation to special ends, has its hæmal arch separated from it, to form the scapular arch; and, accordingly, the third pair of nerves undergoes a similar deviation, the pneumogastric and accessorius being distributed to the whole respiratory apparatus, the heart and chylo-poetic viscera, while the spinal portion of the spinal accessory goes to the trapezius and sterno-mastoid muscles, which form the chief connecting links between the occipital vertebra and its hæmal arch.

3rd. *Function.* The present classification makes the analogy of the cranial to the spinal nerves the more striking, in that it gives to each pair a sensitive and a motor root. Thus, the first pair has for its sensitive root the trigeminus, and for its motor the facial, of which the three motor nerves of the eye and the motor root of the fifth pair are mere accessories. The second pair has the glosso-pharyngeal for its sensitive, and the hypoglossus for its motor root, while the sensitive root of the third pair is the vagus, and the motor the spinal accessory.

Of the arguments that may be adduced in antagonism to this classification, the strongest is, that, in frogs, the hypoglossus is placed *below* the vagus, and becomes the first of the spinal nerves; although the deep origins of the two nerves, even in this case, have been shown by Vogt to be close together.* Another objection is, that the hypoglossus leaves the skull by the anterior condyloid foramen, which is posterior to the foramen lacerum posterius,

* J. Wyman. Nervous System of Rana Pipiens. Washington, 1853.

which transmits the pneumogastric. Therefore, although both of these objections might possibly be ruled out, the arrangement is not to be accepted without due caution.

The pneumogastric arises, superficially, by eight or ten filaments, from the lateral portion of the medulla oblongata, behind the olivary body, between the roots of the glosso-pharyngeal and accessorius. Its deep origin is from a grey nucleus in the lower portion of the floor of the fourth ventricle. The nerve leaves the cranial cavity by the foramen lacerum posterius, within which is formed the ganglion of the root, the ganglion of the trunk being external to the cranium. The root of the pneumogastric is strictly sensitive, but its trunk is both sensitive and motor. Its motor filaments are derived chiefly from the accessorius, which unites with it just below the ganglion of the trunk, besides giving off some filaments to the ganglion of the root. It likewise anastomoses at the ganglion of the root with the facial and hypoglossal, and, at that of the trunk, with the hypoglossal and first two cervical nerves. Both ganglia are intimately connected by numerous filaments with the superior cervical ganglia of the sympathetic, while its trunk receives branches from the middle and inferior cervical and upper dorsal ganglia.

Thus constituted and reinforced at its origin, the par vagum is prepared for a distribution more extensive and functions more varied and remarkable than any other pair of nerves. Its functions may be briefly stated as follows:—Its *sensitive* filaments are distributed, through the auricular, to the external auditory meatus and membrana tympani, through the superior and inferior laryngeal, anterior and posterior pulmonary, to the whole respiratory tract, through the cervical and thoracic cardiac to the heart, and through the pharyngeal, œsophageal and abdominal branches to the digestive tract.

Its *motor* filaments are distributed, through the pharyngeal and inferior laryngeal branches to the pharynx, through the recurrent laryngeal to all of the muscles of the larynx except the crico-thyroid, through the superior laryngeal to the crico-thyroid, through the recurrent laryngeal and pulmonary branches to the tracheal and bronchial muscular coats; and, through the œsophageal, gastric and intestinal branches to the muscular coats of the œsophagus, stomach, and the whole of the small intestine. Until the discovery of the intestinal branches by Kollman, in 1860, the abdominal distribution of the vagus was supposed to stop at the pylorus.

The pneumogastric sends *secretory* fibres to the gastric and intestinal mucous membrane.

Its hepatic branches preside over the glycogenic function of the liver.

It also sends inhibitory or arresting fibres to the heart.

It transmits accelerating and inhibiting fibres to the centre of respiration.

It sends accelerating and inhibitory fibres to the vaso-motor centre, the latter being contained in the depressor nerve of Cym and Ludwig.

Without attempting to go over all of the ground here indicated, this paper will confine itself to the more recent discoveries concerning the relations of the pneumogastric to the heart, the lungs, and the stomach.

Influence of the Pneumogastric upon the Heart.—Although the vagus supplies to the heart both centripetal and centrifugal filaments, its action upon this organ is not that of an ordinary motor nerve. On the contrary, it exerts an arresting or regulating influence. The rhythmical contractions of the heart are induced by an excitation derived from the cardiac ganglia of the sympathetic system, beautifully described and figured by Pettigrew, in the May number of the *Edinburgh Medical Journal* for the present year.* This system bears to the heart the same relation that the mainspring does to a watch, while the pneumogastric answers, in some sort, to the escapement. This influence is commonly known as the *inhibitory* action of the pneumogastric.

The subject of inhibition was first introduced to the profession in 1846, by the brothers Weber, who discovered that galvanization of the pneumogastrics in the neck rendered the action of the heart slow; and if the current were sufficiently powerful, arrested the heart in diastole. Since then, numerous experiments have demonstrated the accuracy of their observations, and have added largely to our knowledge in this direction. The result of these experiments may be stated as follows: †

If one of the pneumogastrics be divided in the neck, the frequency of the heart's pulsations is slightly increased and the cardiac pressure slightly diminished.

If both pneumogastrics are divided, the frequency of the pulsations is greatly increased, at least doubled, while the force is greatly diminished.

Galvanization of the peripheral end of the divided nerve retards or arrests the heart's action; but galvanization of the central ends produces no such effect, showing that the inhibitory influence is a centrifugal one.

If an animal be placed under the influence of woorara poison, which paralyzes motor nerves without affecting sensitive nerves or muscular irritability, and the pulsations of the heart be kept up by artificial respiration, galvanization of the pneumogastrics has no

* James Bell Pettigrew. On the Physiology of the Circulation. Edinburgh Medical Journal, January to May, 1873.

† Flint. The Physiology of Man. Vol. IV. Nervous System. 1872.

effect upon the heart's pulsations; whence we may conclude that the inhibitory power is located in motor filaments. This experiment has been tried by Bernard and verified by Flint.

The experiment has been performed by Traube of injecting digitalis into the veins of a dog with the pneumogastrics divided, without affecting the heart's pulsations; although, when this was done with the nerves intact, the number of beats was, in an hour, reduced to one-fourth of the normal number. This indicates that the sedative action of digitalis upon the heart is due to an irritation of the vagus, transmitted from the brain.

Irritation of the medulla oblongata produces the inhibitory action; but the irritation is conveyed, not by the root of the vagus, but, as has been demonstrated by Waller, by the accessorius.

Recently, it has been discovered that the right vagus possesses a greater inhibitory power than the left. "Dr. Massin states that, while the movements of the heart are stopped by a very powerful excitation of the left vagus, it is always possible, by sharply striking the heart with the finger, to reproduce the rhythmical movements; while this mechanical cause of action remains ineffectual when applied to the heart stopped by strong galvanization of the right vagus."*

The inhibitory influence upon the heart is also exerted in various reflex ways. Brown-Sequard† has found, in rabbits and guinea pigs, that an irritation of the nostrils by carbonic acid or chloroform, or even by a sudden and gentle touch, will cause the heart to stop completely, or, at least, notably diminish its force and speed. Rutherford states that, if any irritating vapor be brought before the nose of a rabbit, it closes its nostrils and ceases to breathe, often for thirty or forty seconds. Within three seconds after the cessation of respiration, the heart comes almost to a stand-still, and continues to beat very slowly until respiration is re-established. Rutherford believes that "this arrest of the heart is due to stimulation of the inferior cardiac branch of the vagus by the asphyxiated condition of the blood;" but Brown-Sequard proves conclusively that this is not the case, but that the phenomenon is due to reflex influence.

The cold bath, especially the shower baths or douche, has, by reflex action, the same inhibitory influence upon the heart. Fainting is even produced in some persons by this means, from complete arrest of the pulsations. Brown-Sequard states that, in Europe, where ice-water is not as habitually used as here, a stoppage of the heart's action is not rare, in the summer season, after the drinking of a large quantity of cold water.

* Brown-Sequard. On the Sudden or Rapid Arrest of Certain Normal or Morbid Phenomena. Archives of Scientific and Practical Med., Jan., 1873.

† Ibid. Most of the physiological facts in this paper are from Flint or Brown-Sequard.

Wounds of the abdominal viscera and blows upon the belly produce fainting or slowing of the heart's action. To Brown-Sequard we are indebted for the discovery that the crushing of the ganglions of the sympathetic in the abdomen stops or diminishes the movements of the heart; but if the spinal cord or vagus is divided transversely, the crushing can be made without any influence upon the heart.

Goltz has demonstrated, in the frog, that the heart can be brought to a stand-still by striking upon the abdomen, and that this paralysis of the heart can be prevented by a simultaneous strong irritation of the cutaneous nerves, which diminishes or abolishes the reflex activity.

It is asserted by Rouget, that the inhibitive action takes place in nerve-cells. He says: "Wherever the excitation of a nerve is followed by an arrest of movement, nerve-cells are found on the nerve-fibres which transmit the excitation." In this view he is supported by Brown-Sequard, who thus describes the process of arrest:

1. An irritation starts from a part of the nervous system radiating towards the nerve-cells, the activity of which is to be arrested.

2. A special influence is to be exerted by this excitation on those cells, arresting their activity.

3. The movements, normal or morbid, or other phenomena depending on the activity of those cells, cease at once when that activity ceases.

In the discovery of the *depressor* nerve by Cym and Ludwig, who first published an account of it in 1867, an important addition is made to our knowledge of the pneumogastric in its relation to the heart. This nerve was found in the rabbit, arising by two roots, one from the trunk of the pneumogastric, and the other from its superior laryngeal branch, passing down the neck, by the side of the sympathetic, to the chest, where, joining with sympathetic filaments, it passes to the heart by little branches between the origin of the aorta and the pulmonary artery. This nerve has since been found by Cym in the horse. In the rabbit it has been made the subject of a very complete and satisfactory series of experiments.

When this nerve is divided in the neck, and its *peripheral* end irritated by galvanization, no effect whatever is produced upon the heart or the circulation; but if its *central* end is galvanized, the pressure is diminished in the whole arterial system. This diminution is gradual, the pressure never reaching its minimum before fifteen pulsations of the heart, and may be reduced to one-half the pressure before the irritation was applied. At the same time that the arterial pressure is diminished, the frequency of the heart's pulsations is reduced, *unless both pneumogastrics have previously been*

divided, when, although the arterial pressure is reduced as before, the action of the heart is not disturbed. These experiments prove that the action of the depressor is entirely centripetal, that its inhibitory action upon the heart is reflex, through the nerve-centres, the trunk of the pneumogastric, and its remaining cardiac branches, while the reduction in the pressure of blood in the large arteries is independent of the centrifugal fibres of the vagus, and bears no relation to the reduction in the number of cardiac pulsations.

In determining the mechanism whereby the reduction in the arterial pressure is effected, Cym has displayed great ingenuity. Having, by a process of exclusion, eliminated all other possible agencies, he has clearly shown that this influence is exerted by reflex action, through the instrumentality of the splanchnic nerves, the most important vaso-motor nerves in the entire organism. "The irritation of the depressor nerve, after section of the splanchnic nerve," to use the language of Cym, "produced still a diminution in the blood-pressure, but the absolute value of this diminution is much less than it was during the irritation of the depressor nerve, before the section of the splanchnic."

The result of these experiments is to show that irritation of the depressor nerves exerts, through the splanchnic, an inhibitory or paralyzing influence upon the abdominal vaso-motor system; and thus, the resistance to the flow of blood being diminished in the immense vascular system of the abdominal organs, the pressure is correspondingly reduced in the arterial trunks.

Influence of the Pneumogastric upon the Lungs.—Recent experiments have made important additions to our knowledge of the nervous processes concerned in respiration. In the first place, Flint conclusively shows that the sense of want of air (*besoin de respirer*) is not communicated to the nerve centres by the pneumogastric; for respiration continues after section of those nerves. Farther than this, Brown-Sequard maintains that the generally accepted view that the centre of respiration is located in the medulla oblongata, at the *nœud vital*, or vital point of Fleurens, is erroneous; for, although respiration is instantly arrested by section or a mere prick at this point, yet section of the medulla or the spinal cord below this point, and above the level of the respiratory nerves, does not, in young mammals and adult birds, immediately stop the rhythmical respiratory movements; and he has even found the contractions of the diaphragm to continue for a time, with great regularity, when its communication, not only with the medulla, but also with the spinal cord, has been cut away. From these observations, it is necessary to believe that the diaphragm is, to a certain extent, an independent organ, containing in itself, as does the heart, sympathetic nerve centres controlling its movements. But the vagus, although not indispensable to respiration, yet exerts upon it a

powerful influence, whose nature will best be seen by noting the result of certain experiments.

If both pneumogastrics are divided in the neck, in dogs, the number of respiratory acts is at first increased; but, as soon as the animal becomes tranquil, the number is diminished, sometimes falling from sixteen or eighteen to four per minute. The inspirations are, at the same time, unusually profound, attended with excessive dilatation of the thorax. Death usually occurs in from two to five days, and, in most of the animals so dying, the lungs are found engorged with blood, so that they sink in water. This carnification is explained by Bernard as due to a rupture of the pulmonary capillaries, consequent upon a traumatic emphysema, resulting from the excessively deep and labored inspirations.

If galvanization be applied to the pneumogastric in the neck, the effect upon respiration varies, according as the excitation is feeble or energetic. A feeble current accelerates respiration, and renders it more vigorous, especially in inspiration, although, if the feeble current is applied very high up, near the origin of the nerve, respiration is arrested. If a powerful galvanic current is applied to the pneumogastric, in any part of the neck, respiration is arrested by a spasm of the diaphragm; but it speedily returns, even during the excitation. After the removal of the excitation, breathing is accelerated.

Galvanization of the superior laryngeal nerve, whether energetic or feeble, arrests respiration by paralyzing the diaphragm. Galvanization of the recurrent laryngeal generally produces the same effect. Respiration is also sometimes arrested by the galvanic current applied to the pharynx or œsophagus.

Galvanization of the lungs produces persistent spasm of the diaphragm, and consequent arrest of breathing in inspiration.

From these experiments, it appears that the pneumogastrics exert a normal stimulant influence upon the function of respiration, and that, under certain circumstances, they may also exert an inhibitory power. The inhibitory effect is produced in one of two ways:—first, by paralyzation of the inspiratory muscles, induced by irritation of the superior or inferior laryngeal, the pharyngeal or œsophageal branches; and, secondly, by a spasm of these muscles, from irritation of the trunk of the vagus, or its ramifications in the lungs.

The first of these modes of inhibition occurs normally in the act of deglutition. It is impossible to breathe, while swallowing; not only because the larynx is closed by the epiglottis, but also because there is a momentary reflex paralysis of the diaphragm, from irritation of the pharyngeal and superior laryngeal nerves.

In the operation of tracheotomy, a temporary stoppage of respiration not unfrequently occurs, from irritation of the inferior laryngeal nerve. The same effect has been observed by Brown-

Sequard, on suddenly stopping the mouth of a tube introduced into the trachea of dogs or rabbits, all respiratory effort at once ceasing.

Arrest of respiration also takes place upon submersion. That this arrest is not dependent upon the spasmodic closure of the glottis, which also occurs, has been shown by Bean and Brown-Sequard, by submerging an animal in whose trachea a tube had been placed, whose free extremity communicated with the atmosphere. Even in this case, no effort was made to breathe, or if so, not till after some seconds. Bean asks if this arrest is due to the influence of *cold* upon the mouth and nostrils. Brown-Sequard answers the question by submerging an animal in *warm* water, in a similar manner, and finds respiration again suspended. He concludes that the irritation produced by the contact of either cold or warm water upon the mouth and nostrils, produces, by its *suddenness*, a reflex arrest of breathing. If the trunk or limbs are dipped in water, breathing is accelerated; but it is arrested by the sudden dashing of cold water upon any part of the body—an illustration of Bert's law that any gentle irritation of centripetal nerves increases the number of the respiratory movements, and any powerful excitation diminishes them.

The engorgement of the lungs following section of the pneumogastric in the lower animals, is also seen in man, when, from any cause, that nerve is severed. A case occurred at the Boston City Hospital,* in 1865, of a woman, whose husband very skillfully divided with a knife the right pneumogastric, as well as the internal jugular vein and the neighboring muscles. She was attacked, on the tenth day, with congestion of the right lung, which passed off on the thirteenth.

Coughing is a reflex, spasmodic contraction of the expiratory muscles, produced by irritation of the inferior laryngeal or pulmonary branches of the pneumogastric. In asthma, there is, according to Salter, a spasmodic contraction of the bronchial tubes, caused by pneumogastric irritation. This irritation is generally reflex, from impressions upon the respiratory or gastric mucous membrane, or the skin; but may arise, as well, from cerebral disturbance. Neftel† has contributed some interesting observations upon the treatment of this most obstinate affection by galvanization of the pneumogastric. He uses the polar method, applying a current of gradually increasing intensity, all large fluctuations being carefully avoided, by means of the rheostat, and reports a marked degree of success, the paroxysm usually passing off in from two to ten minutes. But he finds the relief afforded sometimes by the anelectrotonic, and at other times by the catelec-

* Boston City Hospital, Medical and Surgical Reports. 1870. Surgical Report by Dr. D. W. Cheever.

† W. B. Neftel. Galvano-Therapeutics. New York. 1871.

trotonic condition of the vagus. Reasoning from the spasm-theory of asthma, it was to be expected that the former alone could give relief; but Neftel has found that in certain cases the attack is arrested by the latter condition, after the former has failed. In explanation of this peculiarity, he suggests that the theory, held by Walshe and others, that asthma is due to a paralytic condition of the muscular coats of the bronchial tubes, may be true of some cases, while others are the result of spasm, the former class being relieved by catelectrotonus and the latter by anelectrotonus. The idea is certainly plausible, but, in the present inchoate condition of galvano-therapeutics, we must await further evidence before accepting it.

(CONCLUDED IN NOVEMBER NO.)

Editors' Book Table.

[NOTE. — All works reviewed in the columns of the CHICAGO MEDICAL JOURNAL may be found in the extensive stock of W. B. KEEN, COOKE & Co., whose catalogue of Medical Books will be sent to any address upon request.]

BOOKS RECEIVED.

Report of the Columbia Hospital for Women and Lying-in Asylum, Washington, D. C. By J. HARRY THOMPSON, A.M., M.D., Surgeon-in-Chief. With an Appendix. Washington: Government Printing Office. 1873.

One of the most valuable contributions to gynæcological medicine extant, comprising the results of the treatment of over eleven thousand cases of various phases of the maladies incident to womanhood, together with copious appendices, consisting of reports from the departments of the Diseases of Children, and of Diseases of the Eye and Ear.

The establishment and maintenance of the Hospital whose "Report" is before us, is a gratifying evidence of the appreciation of our representatives in Congress of their duties in regard to the care of residents of every portion of the country, and indeed of the world, who, having been attracted to Washington by their business relations to the General Government, and being prostrated

by disease would have become a tax upon the citizens of the District of Columbia, but for this most humane and enlightened provision for their necessities.

The list of beneficiaries of this national charity comprises residents of twenty-four States and twelve foreign countries, a diversity of origin and constitutional peculiarities complicating morbid conditions, but at the same time adding value to the result. The surgeon-in-chief appears to have been peculiarly successful in his operations, many of which have presented unusual complications and difficulties.

The results of the treatment of uterine cancer have been especially gratifying.

The mode of reporting cases in detail imparts to the work a practical value totally unattainable by the statistical method. The work is copiously illustrated by plates, many of which are from photographs, and its mechanical execution reflects credit upon the government printing office from which it emanates. H.

The Physiology and Psychology of the Brain. By Horatio R. Bigelow, Esq., Boston, Mass.

A small pamphlet containing nothing particularly new, being a feeble effort to argue God out of existence. As a specimen of the style of argument designed to accomplish this end, we quote:

"The present tendency is to look upon mind as the force generated by the chemical re-actions in the vesicular neurine of the cortical and hemispherical cells of the brain." * * * * "The will is a product of the mind, and hence, as a dependent force, the paradox of free will becomes apparent." * * * * "And just as the hand by constant use may become palsied, so the mind by the constant inspection of this one idea, breeds unhealthy chemical action in the cells of the brain, and originates," etc., etc. That is to say, the mind is a force generated by chemical action—the mind breeds unhealthy chemical action, *i. e.*, the mind is generated by its results, or the causes of mind result from mind.

The publication of a little more of this sort of logic, will certainly tend to induce the conviction that some minds are generated by chemical action, and that of a very unhealthy sort. H.

Body and Mind. An Inquiry into their Connection and Mutual Influence, specially in reference to Mental Disorders: an Enlarged and Revised Edition, to which are added Psycological Essays. By HENRY MAUDSLEY, M.D., Fellow of the Royal College of Physicians; Professor of Medical Jurisprudence in University College, London, etc. London: McMillan & Co. 1873.

So rich a literary and intellectual treat as is supplied by the perusal of this little book, rarely falls to the lot of the medical student, and we shall mark the day devoted to it with a white stone.

The author is a master of physiology, and presents that of the central nervous system in a manner as attractive as instructive. He is certainly entitled to the thanks of all investigators in the higher regions of physiology, for having formulated in language some of the ultimate facts in nervous physiology, which, while recognized as truths by some, are, to the many, vague, indistinct, and altogether "without form and void."

The author pushes his investigations into the nature of mental functions and processes from a physiological stand-point, rejecting altogether metaphysical data as bases for conclusions, and we cannot help feeling that he is a little too exclusive in this rejection of all *a priori* conceptions.

There appears to be no essential difference between the theory of the creation of what is termed mind as an entity, and of a nerve-cell which is claimed as the agent of its production.

Whether the investigator proceed upon the theory of progressive development of organisms, or of specific creation, he must, sooner or later, reach a limit beyond which his inductions will not carry him, here he must stop, even the theory of spontaneous generation will not aid him; "*ex nihilo nihil fit*," in the natural order. While we do not presume to insinuate that so great a mind as that of Maudsley could be tainted with atheism, such is, nevertheless, the necessary result of these development theories, if they are pushed to their logical consequences, of which he very prudently stops short.

The critical essays in the latter part of the book are extremely fascinating. The character of Hamlet is analyzed in a masterly manner, the treatment of the subject proclaiming its author to be

as much at home in the realm of belles-lettres, as in those of physiology and psychology. H.

Skin Diseases, Their Description, Pathology, Diagnosis and Treatment. By TILBURY FOX, M.D., London, Fellow of the Royal College of Physicians of London; Physician to the Department for Skin Diseases in University College Hospital; Fellow of University College. Second American, from the Third London Edition; Rewritten and Enlarged, with a Cutaneous Pharmacopœia, a Glossarial Index, and Sixty-seven Additional Illustrations. New York: William Wood & Co. 1873.

"To be a successful dermatologist, it is necessary to be a well informed physician," says the author of the above named treatise, and its careful examination will convince the student that it is the work of one who can lay claim to both these distinctions. The earlier chapters upon the method of study, upon the anatomy and anatomical consideration of the skin and its appendages, upon its general pathology, etiology and therapeutics, are especially well systematized and lucid. The chapter on classification presents sound, new and meritorious ideas, and the glossarial index will be found a great convenience to the busy practitioner. The descriptions of the less common forms of disease are numerous and from reliable sources. The work is profusely illustrated with wood-cuts—many of which are new. H.

The Cerebral Convolutions of Man; represented according to Original Observations, especially upon the Development in the Fœtus. Intended for the use of Physicians. By ALEXANDER ECKER, Professor of Anatomy and Comparative Anatomy, in the University of Freiburg, Baden. Translated by ROBERT T. EDES, M.D. New York: D. Appleton & Co. 1873.

A laborious and faithful analysis of the lobes, convolutions, and fissures of the brain, aptly illustrated with diagrams in outline, which cannot fail to be instructive to the diligent reader. The author has been a faithful student of the literature of his subject, which being for the most part in French and German, is inaccessible to the majority of American readers. The translator has done his work with remarkable fidelity, and has demonstrated his knowledge, not only of German, but, what is still more rare, of accurate English. H.

Epidemic or Malignant Cholera. By ALFRED STILLE, M.D., Professor of Theory and Practice of Medicine in the University of Pennsylvania. Reprinted from the Philadelphia Medical Times. Philadelphia: J. B. Lippincott & Co. 1873.

A brief summary of the history, etiology, pathology and treatment of this formidable malady, from the pen of one of the most accomplished members of our profession. The reader will be disposed to find fault with the brevity of the pamphlet, and regret that the doctor has not entered more fully into the details of treatment. It is satisfactory to know that he repudiates the theory of the common origin of cholera, and claims for it a specific origin and an invariable source.

Those who are doubtful upon this head, should dispel their doubts by the careful perusal of this little monograph, in which their time will be by no means wasted. H.

Mineral Springs of North America—How to Reach and How to Use Them. By J. J. MOORMAN, M.D., Physician to the White Sulphur Springs; Prof. of Medical Jurisprudence and Hygiene in Washington University, Baltimore, etc., etc. Philadelphia: J. B. Lippincott & Co. 1873.

The Mineral Springs of the United States and Canada, with Analyses and Notes on the Prominent Spas of Europe, and a List of Sea-Side Resorts. By GEO. E. WALTON, M.D., Lecturer on Materia Medica in the Miami Medical College, Cincinnati; Committee of the Medical Association of the State of Ohio, on "Therapeutics of Mineral Springs." New York: D. Appleton & Company, 549 & 551 Broadway. 1873.

Editorial.

To Correspondents.

Induced by an earnest desire to comply with the wishes and advance the interests of correspondents, we have occasionally admitted to the pages of the JOURNAL communications which our judgment, unbiased, would have induced us to reject. To protect our pages from the introduction of any matter not in the highest degree worthy, and to secure to our readers that to which they are justly entitled, *i. e.*, original matter from reliable sources, we shall

hereafter publish no article from an unknown source unless it be accompanied by a reference to some resident practitioner in good standing who will vouch for the good faith and respectability of the writer.

The JOURNAL will not be degraded into an advertising medium for individual pretension, but a permanent record of professional progress.

"The Abuse of Medical Charities."

The *N. Y. Medical Record* (Sept. 1, 1873,) contains an admirable editorial upon "The Abuse of Medical Charities," which concludes with the following: "When a profession can claim to treat gratuitously three hundred thousand paupers annually in New York City, not counting those in hospital, and knows at the same time that one out of every ten of the young medical men in that city can barely earn a living, we think it is about time to look into the matter, to consider whether the occasion is not opportune for proving the force of the proverb, 'Charity begins at home.'" We hope that every reader of the JOURNAL will read the entire article and make the application to his own locality, to which it is doubtless quite as appropriate as to that for which it was written. For the little consideration which the medical profession enjoys throughout this country, it is indebted to some of its own members, who, avaricious of practice and notoriety, have sought to acquire them by cheapening their own services, and thus taught society to fix a very low valuation upon that which is eagerly offered without fee or reward.

The world's standard of value is cost; that which costs little is, in the popular estimate, worth as little. At the present time the pay of the average physician is actually lower than that of the average mechanic, relatively very far below; and why? because the public knows it must pay for the services of the mechanic, whereas those of the physician can be obtained for nothing, or, at the most, for a promise to pay which is never meant to be redeemed, and of which the average physician has not the moral courage to enforce the fulfillment.

This cheapening of their profession works a double injury and perpetuates itself; first, by oppressing the young and obscure, whose services are esteemed valueless when the elders hold their own so

cheap; and secondly, by thus discouraging the entrance into the profession of those who would maintain its honor and advance its interests. Thus the professional standard is actually approximated to that which it is made to appear, by some pseudo-philanthropists in its ranks.

The medical profession appears of late to have abandoned its *esprit de corps*, and its members to have concentrated and individualized their interests; instead of elevating the honor, dignity and importance of their profession and therewith their own as of integral parts of it, too many seem to be striving to rise alone in solitary grandeur upon its ruins.

There is one method of elevating the dignity of the profession, and of increasing the value of its services, which is within the reach of every physician; a method entirely within the comprehension of the public, and which it will most thoroughly appreciate, which if adopted and maintained consistently and persistently, will in one single year advance our profession in the public respect to a higher degree than can be accomplished in ten, by any other means. The method is this. Be strictly conscientious in rendering the best services within your capacity to your patients, and equally conscientious to yourselves in exacting a full equivalent for them, to be paid when the services are rendered; not at the end of the month, quarter, or year, but on the spot. In other words, treat your patient as he treats you. Let us ask no protection for our profession, no privileges, but simply the privilege to protect ourselves.

When you are asked for charity you will then have the wherewithal to do charity, you will be able to give out of that which you have received. In plain English, adopt the cash system as the rule of compensation for professional services, and we can assure those who will try it for one year, that they will never abandon it. *Experto crede.* H.

The *New York Medical Journal*, for September, 1873, announces that "Dr. Walter Hay, of Chicago, has been appointed Adjunct Professor of Principles and Practice of Medicine in the Western Medical Institution." This is news indeed to the one most interested. We had the honor to be appointed to that position in Rush Medical College, but "the Western Medical Institu-

tion" is something which we know not of. Will the *New York Medical Journal* please relieve us of the unmerited honor and oblige H.

Loot.

Treatment of Traumatic Neuralgia. By S. Weir Mitchell, Physician to the Philadelphia Orthopœdic Hospital and Infirmary for Diseases of the Nervous System. ("Injuries of Nerves, and their Consequences,") 8vo., p. 337. London: Trubner & Co. 1872.

In the treatment of traumatic neuralgia the author says:

"The pains of traumatic neuralgia are so terrible that we are usually driven at once to the use of narcotic hypodermic injections, without which it would often be impossible to relieve such cases. In neuralgia, from what we call, for want of a better term, irritation of the nerves, there is reason to believe that some of the opiates, in the form of hypodermic injection, may prove more or less curative in their action; but where, as in most traumatic neuralgias, there is manifest organic alteration of the nerve, such agents are chiefly of service, because they relieve pain, and thus enable us to bridge over, so to speak, the many months of torture which are needed to bring the nerve back to health again, or to afford time for electrical or other treatment. * * * At the present time, this mode of using narcotics has grown into common use, but even yet it is scarcely estimated at its full value. In the wards for nerves and wounds in the U. S. A. Hospital, it is almost the only plan of treating severe neuralgic pain; so that twice or thrice a day the resident surgeons pass around these wards with their narcotics and hypodermic syringes, seeing, as a physician observed to me, anguished and troubled faces before them, and leaving behind them comfort, and even smiles.

"During one year at least forty thousand doses of various narcotics were administered without an accident, and in certain single cases upwards of five hundred hypodermic injections were used; so that, if there were no other evidence of the innocence of this mode of medication, our own experience would have been amply competent to settle the question. I have had large opportunity of studying, in traumatic neuralgia, the comparative merits of narcotics used by the mouth or under the skin, and I have no hesitation in stating my opinion, that the latter method is not only the more effective, but also the less harmful, constitutionally. For the easing of neuro-traumatic pain we tried, in turn, the whole range of medicines known as narcotics, such as conia,

hyoscyamus, daturia, atropia, and morphia. None of them, save the last, seemed, when singly used, to be of the slightest value; and, one by one, they were laid aside, until in the vast mass of cases, the salts of morphia alone were employed. A careful series of examinations showed, very distinctly, the trifling influence of atropia upon this form of pain. Several cases of intense neuralgia from wounds were treated with injections of sulphate of morphia under the skin in rising doses. When we learned the amount needed to give entire ease, we used in its place next day a full dose of atropia, our largest injection having been one-fifteenth of a grain. The most absolute failures attended these efforts; so that without denying to this latter drug the power ascribed to it of relieving certain neuralgias, I am sure that it is in the traumatic species simply useless. The morphia salts, on the other hand, are invaluable. For hypodermic use, I usually employ at first one-fourth of a grain of the sulphate, but I have given as much as a grain and a half twice a day. When continuously used, it is curious that its hypnotic manifestations lessen, while its power to abolish pain continues; so that the patient who receives a half grain or more of morphia may become presently free from pain, and yet walk about with little or no desire to sleep. The ability to lessen pain is not, therefore, of necessity, connected with the sleep-compelling potency. Where, however, the latter is inconveniently felt, and we desire the former only, it is possible to attain the end in view by using with the morphia a certain share of atropia. Thus, if we inject half a grain of sulphate of morphia, and with it the thirtieth of a grain of sulphate of atropia, the anæsthetic force of the morphia will remain unaltered, but the tendency to sleep will be greatly diminished. The views here set forth were reached after long and careful experiments on large numbers of men, and seem to justify the practice of using atropia and morphia together. As regards the place of injection, I agree with most observers that it is generally of little moment, the effect being the same whether it be thrown into the affected limb or into a remote part."—*Half-Yearly Abstract, Med. Sciences*, 1873.

Mercury and Iodide of Potassium in Syphilis.

Dr. Willard Parker of New York, in a recent clinical lecture reported in the *Medical Record*, sets forth the following views:

"I am aware that I differ with many of my brethren in the treatment of syphilis, but I believe that the poison of syphilis can only be removed from the system in almost all cases by the judicious use of mercury. This mercury is to be used wisely and in moderate doses, so as not to impair the vigor and health of the system. Very often it is important to make use of some tonic at the same time, such as quinine or the preparations of bark. These have been my convictions for a great many years, and I give them as

the result of my own practical observation, and have never seen any reason to vary the conviction that iodide of potassium, alone, cannot overcome the syphilitic poison in the system. The iodide of potassium, however, is a very valuable remedy in the treatment of syphilis, but it comes in after we have accomplished our purpose with mercury, in order to remove any deleterious effects of the mercury which may be left in the system. Here its value cannot be over-estimated. The powerful effect which the iodide of potassium has upon the system, especially where mercury has been employed pretty freely, is sometimes seen in the profuse ptyalism which it produces, and if the syphilis receives any benefit from the administration of iodide of potassium, I believe it is in those cases which have been heretofore treated with mercury, and the iodide arouses the mercury to new action. You can remove mercury from the system by the use of iodide of potassium, but you can never remove syphilis by using it. At the same time that we use iodide of potassium in order to get good results in the system, I almost always employ the iodide of iron, as you see in this case. The point is, as has been stated, to bring the system up to par. The usual formula which I employ consists of six drachms of the iodide of potassium, one ounce of syrup iodide of iron, and make a six or eight ounce mixture. * * * The plan which I adopt and recommend in the treatment of syphilis is as follows: Take a case of genuine Hunterian chancre. I commence with the administration of iodide of mercury in one-half grain doses twice in twenty-four hours, combined with something, perhaps hyoscyamus or lactucarium, to prevent irritation of the mucous membrane of the intestinal canal. Continue this, in connection with a true diet, consisting of simple plain material and such as will produce healthy blood, embracing breadstuffs, eggs, milk, and meat twice a day, and cutting off entirely tobacco and all alcoholic drinks; continue the doses until the feeling of hardness about the chancre is all gone. Then stop the remedy, and watch the patient. If the disease begins to come out in the system, manifesting itself by glandular enlargements, diseases of the skin, affections of the fauces, or any one of these evidences, which shows that the poison is still in the system, resume the mercury as before and continue it until the disease has again passed away. It will be necessary to watch these patients for a long time, at least for months, and perhaps for a couple of years or more."

Capital Punishment.

We will doubtless all unite in the opinion that certainty of execution is the chief value of all penalty. This *uncertainty*, or rather almost absolute certainty that the extreme penalty will not be inflicted, is an encouragement to the murderer that his crime will somehow go unpunished. These questions of criminal law, how-

ever, are not so much a matter of professional inquiry or interest as that other question—how shall the extreme penalty of the law be best fulfilled? The question of humanity should never interfere with the power and influence of law; but if the control of law and the sanctity of humanity can be made to accord, all will certainly say 'amen!' If it be well to make death the penalty of certain crimes, the question comes to medical men, how shall this extreme punishment be inflicted so as to meet the requirements of justice, and yet avoid unnecessary cruelty in its execution. In various countries, death has been secured by hanging—as in this country—by the garrote, by the guillotine, by shooting. Some experiments by Prof. Brown-Sequard would seem to indicate that death by the guillotine is perhaps one of the most cruel of all known modes. Of course a headless man does not come back to tell us how long or how extremely he suffered; but we are led to infer that the cruelty of this punishment is beyond the general conception. Death by hanging is, to say the least of it, coarse and brutal. Its influence on the public mind cannot be elevating or conservative of morals of itself. So we come back to repeat, *extreme* punishment, as by death, is only of value, so far as penalty follows closely on crime. Now, if death shall continue to be a proper penalty for murder, the question for us, as medical men, to consider, is, how shall death be inflicted? Shall we shoot the culprit, or hang him like a dog, or cut off his head? The displays to morbid appetite in first-class hangings are too notorious to require comment. We respectfully suggest, then, that our professional influence should be exerted in favor of a more rational and decent death penalty. Let the criminal be required to die by chloroform, for example, or the inhalation of carbonic acid gas, quietly, in his cell, surrounded, if you please, by his medical and spiritual advisers. Death by chloroform is sufficiently certain; should not be a matter of public and morbid exhibition; is not cruel; all the requirements of the law are complied with. We demand, then, these two points—certainty of execution and humanity of the manner.—*Cincinnati Lancet and Observer.*

Imposition on Life Insurance.—*A New Department of Medical Journalism. An Interview between a Medical Journal Canvasser and a Medical Officer of a Life Ins. Co.*

Ques. "Doctor, I have called to present you with a copy of our *Medical Journal*, and call your attention to the new branch of medical science we have lately introduced. Don't you think the subject of Life Insurance a very important one to bring before the medical profession?" Ans. "Certainly." Ques. "Well, you see, we call it the 'Medical Department of Life Insurance.' We solicit from the medical officers of all the Life Insurance Companies articles bearing upon this subject, and would like to have you

furnish us one for our next number. We wish to make this department instructive, especially for the benefit of medical examiners throughout the country, and it will be a very cheap way for Life Insurance Companies to advertise and furnish such kind of information. Several of the larger companies have already agreed to take several hundred copies to send to their examiners, as we can furnish it to them at a much reduced cost from the regular subscription price." Ans. "Ah, I see; then the whole gist of the matter is, that your publishers propose, by extracting what little phosphoric elements may be squeezed from the brains of the companies' medical officers, without compensation, to illuminate their rustic brethren in the same line, and thus create a demand for new subscribers. In this way you may 'hit two birds with one stone.' Well, this may be all very well for increasing publishers' incomes, but don't you think it is a little like 'crowding the mourners'?

"Now, I pay the full subscription price for your Journal, and you propose to add to your income by *peddling to* companies your Journal at half cost, at my and my medical brethren's expense. You wish to get valuable articles without cost, then induce companies to subscribe for a large number of copies at reduced prices, to circulate among their medical examiners, to induce these throughout the country to become subscribers, to make your Journal a pecuniary success, and also advertise your other published works.

"It really seems to me that the medical profession are already pretty well taxed, physically and mentally, in the various walks of this life. With gratuitous hospital and private services rendered the poor and needy, uncollectable bills, with income barely adequate for supplying themselves with the necessaries of life, to say nothing of numerous ephemeral medical journals, now to be called upon to contribute their 'mite' to swell the coffers of large publishing houses, by voluntary contributions, is asking a 'leetle too much.' I have always admired that trite old saying of Scripture, 'The laborer is worthy of his hire,' and in this age of 'strikes,' think the medical profession should join in refusing to work any longer for cormorant capital, without adequate compensation. I hope to see the day when medical journalism will be placed upon the proper business relation that daily journals are,—that its corps of contributors shall be compensated for their time and labor. Then we would see articles having true merit, full of instruction, and from the most learned in the profession, instead of the *advertising squibs* which now fill them. Don't you think the National Medical Association ought to interdict, in the code of ethics, publishing in medical journals articles with their authors' names and titles as specialists? If a medical gentleman has true merit in any special branch, his peers will soon find it out, without resorting to such doubtful means to catch the public eye."—*The Sanitarium.*

Life Insurance.

I am much gratified to see that you have added the medical side of life insurance to the many other interesting and practical features of your journal. The articles presented are all of much practical value, and just this kind of information is sadly needed by the majority of medical examiners. Permit me, as an examiner of some experience, to call attention to some points connected with the business, which I think deserve attention.

The article in the *Record* for May 15, entitled "On the Relation of the Medical Examiner to the Business of Life Insurance," by a Secretary, is very just and true, and certainly demands no more of examiners than a proper personal independence and appreciation of professional obligation would at all times prompt the *right-minded* to perform. But just here is the trouble, and the secretary evidently understands it, for he says it is this very want of personal independence which is far more dreaded by underwriters than any mere want of professional capacity. Unfortunately the two combined are not unfrequently met with, and I have seen and known of more than a few instances of such an utter want of both in the examiner as to make him the *subservient tool* of the agent. It is the agent's business to solicit risks, and it is his pecuniary interest to have those risks approved at the home office; so he is never backward in using an ass of a doctor if he can. And not unfrequently does it occur that the agent purposely avoids giving business to a man he knows to be competent and independent, preferring a more *compliant* examiner.

I have been cognizant of this state of things for so long a time, and have seen but little, and very imperfect, effort made for its correction, that I have begun to think the companies were indifferent about it—supposed they were making fortunes rapidly under this kind of procedure, and did not care to make any additional effort to correct abuses. If a remedy for it should be sought, I would suggest that one step in the right direction has been taken in securing the co-operation of your journal; another, and most prompt and decided check on these abuses, would be the securing of *competent and reliable medical men* as inspectors of agencies, paying such salaries as would command competent men, who would give the business their entire time. A competent medical man would, by the very nature of his professional training, and sharpened powers of observation, be capable of going into any agent's district, making the acquaintance of the physicians acting as examiners, and *others not so acting*, and render a far more correct opinion, *cæteris paribus*, than a non-professional inspector.

Permit me, in closing, to suggest that according to my observation here in the South, the tables of average weight to height are at least ten pounds higher than a correct estimate. MED. EXAM.
—*Medical Record.*

Reports of Societies.

Brainard Medical Society.

The Brainard Medical Society met in the Christian Chapel, in Winamac, Ind., June 12, 1873.

Members present: F. B. Thomas, James Thomas, A. R. Thompson, W. T. Cleland, G. W. Nafe, Le Roy Rogers, Wm. Kelsey, D. F. Moss, H. E. Pattison, W. H. Thompson, G. W. Thompson, I. B. Washburn, and J. W. C. Eaton.

The President, Dr. Glazebrook, being absent, the Secretary called the Society to order, and introduced the President elect, Dr. I. B. Washburn, of Logansport.

Before taking the Chair, he read his inaugural address, which elicited the closest attention. A copy of it was requested for publication in the Winamac and Logansport papers.

On motion of Dr. Kelsey, T. J. Loring, medical student, was elected a member of the Society.

Dr. Eaton, of Pulaski, read a paper on the Pathology of Typhoid Fever.

In his paper, Dr. Eaton objected to the term typhoid, but said the typhoid state would be preferable. He said the products of tissue metamorphosis are chiefly eliminated by the kidneys. As long as the kidneys are equal to the increased work, the blood is properly depurated and the typhoid state warded off. But if, from the large amount of effete matter, or from any other cause, the kidneys be not equal to the task, the blood becomes poisoned, and either convulsions or the typhoid state supervene.

The paper was discussed at length by Drs. Cleland, Kelsey, Rogers, Pattison, Nafe, and Washburn.

The Society adjourned to meet in Star City, August 7, 1873.

J. W. C. Eaton, *Sec'y.*

Cass County (Indiana) Medical Society.

A number of the physicians of Cass county, Indiana, met in the Court House, in Logansport, and organized a County Medical Society, by adopting a constitution and electing the following members officers for the ensuing year:

President—J. A. Adrain, Onward.

Vice-President—W. H. Bell, Logansport.

Secretary—J. H. Goodell, Walton.

Treasurer—J. M. Justice, Logansport.

Censors—Asa Coleman, Logansport; James Thomas, Royal Center; I. B. Washburn, Logansport.

The Society adjourned to meet in November.

J. H. Goodell, *Sec'y.*

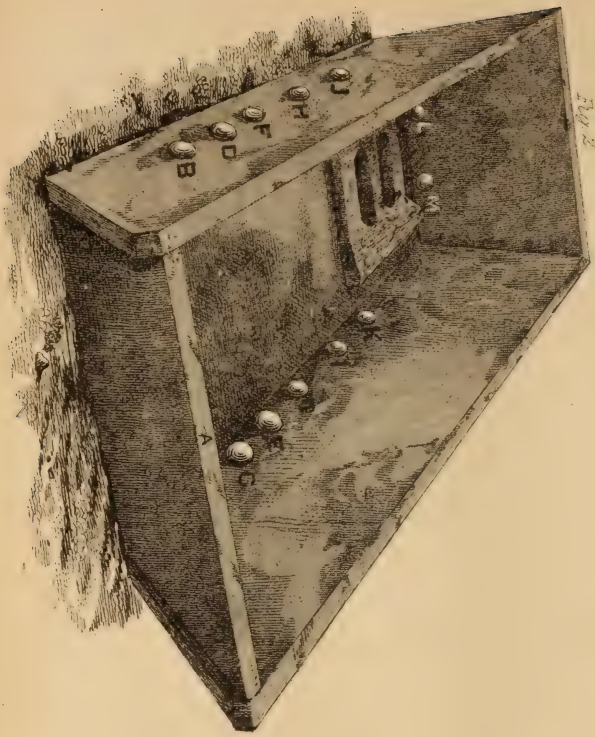


Fig 1

THE

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EDITED BY J. ADAMS ALLEN, M.D., LL.D.; AND WALTER HAY, M.D.

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Original Communications.

ARTICLE I.—*Therapeutics of the Electro-Thermal Bath; Embracing the Use of Induced and Galvanic Currents in such a Bath.* By JUSTIN HAYES, M.D., Chicago.

In the lithographs, Fig. 1 represents the helix and key-board, and Fig. 2 the electro-thermal bath tub. The letters by the switches on the key-board, and electrodes in the tub, are arranged alphabetically, except the switches Q and R, which represent the off currents, and N, which connects the battery current with the helix. The switch A is connected by a wire to the head-plate A in the tub; the switches B C are connected with the B C electrodes in the tub; and so on in alphabetical order till you reach the foot electrodes L and M. O represents the commutator or current-changer; P the rheotome, and S the electro-magnet or core. The head-plate, or electrode, is a piece of sheet copper, the form oblong, and breadth seven inches; this is attached to the centre of the head of the tub, and covered by a perforated board; over this is placed a rubber cloth insulator, to protect the spine from the direct action of the current; this insulator may be narrowed at pleasure by rolling it on the sides, so the current may approach still nearer

to the spinal cord when the condition of the patient indicates it; in cases where the current should be applied directly to the spine, while lying in the bath, it should be removed.

GENERAL CURRENTS IN THE ELECTRO-THERMAL BATH.

These currents are termed *general* because they are given off from so many electrodes, consequently exerting a general influence on the whole system, tranquilizing and producing tonic, and stimulating; or sedative and depressing effects, according to the strength and duration of the applied currents. The switches on Fig. 1 are set for the general currents; these are the currents that are used when the patient is first placed in the bath, and are switched on before the patient comes out, let the other treatment during the time they are in the bath be as varied as it may be. The head-plate is positive, and all the other electrodes in the tub are negative. In cases where the negative bath is required in the beginning of the treatment (which is the exception), raise the handle of the commutator; this reverses the currents, making the head-plate negative and the other electrodes positive. To make it a galvanic bath, insulate one arm of the commutator by slipping a piece of paper under it, and connect the galvanic battery to the key-board, having another commutator and current selector for this current, and you are enabled to make all the changes in directing this current, that you are with the induced current in the electro-thermal bath first mentioned. The galvanic current should be so connected with the cells of the battery, that you may add from one to three elements at a time, till you have the desired amount. It is also quite necessary to have the current connected with a galvanometer, that you may know the strength of the current, when it is conducted to the bath; and when treating very sensitive patients the rheostat should be connected, for this current is one that will do great good or great harm, according to its use; and the physician should always know the amount that he is using, and closely observe the immediate effect upon his patient, before leaving him in the hands of the operator. The two coils, which enter into the construction of the faradaic apparatus, from which the induced currents for the electro-thermal bath are obtained, are composed of thick and short wire, which give a quantity rather than intensity current. The helix and key-board represented in Fig. 1 were made

to the order of the late Dr. Young, of Cleveland, Ohio, with the exception of an increased number of keys, which I have added to meet the improvements I have made in the tub electrodes, (which improvements are offered to the profession free of charge.) Dr. Young patented his invention, and it is now held by Dr. John C. Mairs, Steubenville, Ohio.

Twelve years ago, while residing in Cleveland, Ohio, I was invited by Dr. Young to observe the effects of the electro-thermal bath on his patients, which I did occasionally for about six months. Although his theory as to the bath "reproducing diseases" was erroneous, and his treatment hap-hazard, I became convinced that his invention was an advance over anything of the kind that I had a knowledge of, and that its efficacy in treating diseases that the bath was appropriate for, might prove a great success when properly prescribed and used by scientific physicians. I purchased two baths and the apparatus pertaining thereto, which were somewhat similar, and after using them for a few months I discarded one, and have made my improvements from the one previously mentioned.

As there has been no scientific work or essay on the use of the electro-thermal bath, (embracing the use of induced and galvanic currents in such a bath,) I desire to place some of my experience before the profession. At the same time I wish to be understood that in my practice I have ever eschewed hobby-riding, and sought the best means of the profession for my patients.

To prepare the electro-thermal bath for a patient, it is necessary to know if the patient is very sensitive to warm or cool water; the bath should be of a temperature to meet the feelings of the patient pleasurably on first going into it. As a general rule it should be prepared at 98° Fahrenheit, and gradually increased till it reaches in some extreme cases 110°; the guide for increasing the temperature must be the patient's feelings, as no set rule can be given for every case. The time in the bath ranges from eight to thirty minutes; the first one taken should not be more than ten or twelve minutes; the effects of this bath will serve as a guide to the time occupied in subsequent treatment of the case. The patient lies down in the bath, being covered at the same time with a canton flannel sheet, the head resting on a sponge which is under or on napkins folded above the insulator, the feet resting against the foot

of the tub, unless the patient is too short to reach it, then they should be supported by a foot-adjuster; a small napkin wet in cold water, wrung out so as not to drip, should be placed on the forehead; then turn the switch N on to the post, as shown in Fig. 1; this sends the currents at once through the water to the patient. Before connecting the current to the helix, be sure that the core is nearly out of the coil, so that the patient will not receive too much of the current in the beginning, and, to make this doubly sure, when through treating a patient, disconnect switch A, as well as N, so that when you begin to treat the next patient, should you forget to withdraw the core in starting the machine, the patient will receive no electricity till you connect the head-plate by the switch A, and this will be very sure to call the attention of the operator to the position of the core. As soon as the currents are conducted to the patient, the operator should at once commence dipping with a handled dipper which holds about one quart, pouring the water gently on the upper part of the chest, beginning on the opposite side of the patient, and bringing it around to the side next the front of the tub; this is continued more or less during the treatment. Increase the temperature of the water from the beginning, by a small stream till the patient feels warm enough; push the core in to give the current intensity enough to be perceptible to the patient. These currents should be continued from three to five minutes, then take the electrode connected with the positive off-current R, place it on a soft wet sponge, turn the sheet down to the hips, throw off switch A, grasp the sponge firmly in the hand, and apply the back of the fingers over the region of the liver — that the operator may feel the strength of the current, and test the sensibility of the patient to its action; if it gives no pain, apply the sponge, pressing it gently, carrying it over the spleen, then downwards in the course of the descending colon to the left iliac fossa, passing across the lower part of the abdomen to the right iliac fossa, and from here up the course of the ascending colon, continuing over the transverse colon and the small intestines; then apply it, as in the beginning, over the region of the liver, repeating the manipulation three or four times; then spread the sheet back over the chest, switch on A, as in the beginning of the treatment, and proceed as at first, until one minute before the expiration of the time; then place your hand under the neck

to assist the patient in sitting up in the tub; throw off switch A; take the electrode connected with the positive off-current R, place it in the sponge, and press the sponge on the nape of the neck a little one side of the spine, carrying it down the whole length of the back, alternating from side to side from three to five times, carrying it *near* the spine but not directly on it. This finishes the bath, given in general debility.

The patient should be well dried off, and afterwards rubbed with the dry hand if there is any chilliness. A small handful of salt is usually thrown into the bath, unless iron is indicated in the case; then use from one to two ounces of the following solution:

R. Ferri Sulphatis, ... oz. j.
Acidi Sulphurici, ... oz. iij.
Aquæ puræ, ... oz. viij.
M.
S. Use in each bath from one to two ounces.

Seven years ago, in giving the iron bath, I used from one to two drachms ferri sulphatis, making the bath turbid, and staining everything it came in contact with; thus making it necessary for the patient to take another bath of clear water to free the surface of the body from the iron stains. At that time, Mr. Varley, of London, the electrician of the Atlantic Cable Co., was receiving my treatment. One of the remedies prescribed was the electrical iron bath; when he learned how it was prepared, he said that in his experiments he had discovered how to make a water solution of the ferri sulphatis clear, by adding acidi sulphurici, so that it would not stain a piece of white linen when dipped in it. From his suggestion the above formula was made.

Mr. E——, a resident of Chicago, came to me in July, 1871, for treatment. He was about forty years of age, of good habits, and was suffering from general debility without any apparent cause; he was not overtaxed in any way, as his business required no more of his time than he chose to give it—the pulse feeble, about sixty-four per minute; tongue slightly furred; did not suffer pain; complained of nothing but weariness and want of ambition, and felt worse about 11 A. M., showing a slight climatical periodicity; had a poor appetite most of the time, when he did relish his food and eat to satiety felt heavy and less disposition to exercise; bowels torpid,

and skin inclined to be dry; urine normal, but a little less in quantity than when in health; slept well the first of the night, but restless and uneasy the latter part of it. I prescribed the electro-thermal bath with iron, as previously directed for cases of general debility; time in bath ten minutes; advised him to take another the next day, which he did; he slept a little better and was not quite as stupid at 11 A. M. I prescribed, in connection with this treatment, the following:

R. Quiniæ Sulphatis, ... gr. xij.
Piperinæ, ... gr. iiij.
M. Fiat pulv. No. xij.
S. Take one at meals and bedtime.

Advised him to come in the day following for treatment. On his return the third day he said he felt but little better, and feared it was not the right treatment for him—was afraid the warm water would make him weak. I said to him that I was confident if he would continue treatment for eight or ten days, he would be pretty well. I prescribed the foot-bath with the *vitalized* treatment, to be alternated with the electro-thermal bath, as previously given. The vitalized treatment was given, as follows: His feet were placed in a foot-bath at 98° Fahrenheit, and gradually raised to 101° with the negative electrode in the water, the positive electrode in a soft sponge and placed by the operator over the region of the liver—with an intensity current appreciable to the patient—from here it was passed over the right pectoralis major muscle, across the chest to the left pectoralis major muscle, down the side over the spleen to the left iliac fossa, across the lower part of the abdomen to the right iliac fossa, up the ascending colon and over the transverse, finishing the circuit over the small intestines. This was repeated twice, then the sponge was grasped in the left hand of the operator, the right hand carried slowly over the chest and abdomen, following the same course as the sponge, for four or five times. Then the sponge with the positive electrode was placed on the nape of the neck, one side of the spine and carried down the whole length of the spine, alternating twice from side to side. This was followed by using the hand for an electrode as in treating the chest and abdomen, carrying the hand over the spine, as well as at each side. The treatment was concluded by the patient holding the sponge with the positive electrode for three minutes—

time of treatment being twelve minutes. The tenth day he was so well that he required no more treatment.

The following cases will show the treatment for arresting the growth of fibrous tumors of the uterus:

Case 1. Mrs. E——, aged forty-two years—from the central part of the State; came for treatment in the spring of 1867 (the exact date I am unable to give, being destroyed in the fire, Oct. 9th, 1871), suffering with intra-mural fibrous tumor, and menorrhagia. Upon examination, I found the case to be a very serious one, and advised her husband to get a physician who had experience in the treatment of ladies, for counsel. Dr. DeLaskie Miller was called; his diagnosis concurred with mine as to the nature of the tumor. He thought her general health might be improved—had but little, if any, encouragement to give as to removing the tumor. As to the use of electricity in such cases he had had no experience; suggested the use of iodine externally over the abdomen, and iodide and bromide potassa internally; which was given according to the following formula:

R. Potassii Iodidi, } Potassii Bromidi, } . . . *aa* dr. vj.
Syr. Sarsaparillæ Comp., . . . oz. viij.
M.
S. Take one teaspoonful three times a day.

Upon examining the uterus, the os was found in an irregular nodulated condition, and within one inch of the labia majora, the os tincæ opened so that it would admit the index finger, three-quarters of an inch; the uterus was about the size of a quart bowl, and irregular in form. In the year 1848, she commenced having profuse hemorrhage at her menstrual period, lasting from one to three weeks; this continued up to the time she came to consult me. Some of her physicians had ascertained that she had a tumor, and within four or five years previous to her coming to me, she could both see and feel the enlargement above the pubis. She was very much emaciated, exhausted and mentally depressed; and as she never had received any permanent benefit from her physicians, did not expect it now. The treatment was commenced by applying iodine over the abdomen, then taking the electro-thermal bath with iron, commencing with the currents as recommended in general debility; a vaginal injection of tepid water, as soon as she was

comfortable in the bath, this followed by a bromine wash, according to the following formula :

R. Bromine, ... gtt. viij.
Aqua Dist., ... ȝz. iiij.
M
S. Use one teaspoonful in two tablespoonsful of tepid water once a day.

After taking the general currents three minutes, having the temperature properly increased, all the switches that carried the currents to the tub were disconnected except I; then H was connected to the upper post, making a concentrated transverse current through the abdomen to the tumor; changing the direction of the currents, by changing the commutator, alternating from positive to negative, and negative to positive, four or five times; with an intensity current that caused a perceptible motion of the abdomen from side to side, when the current was changed; this was continued two minutes, then H was disconnected from the upper post, the operator taking the positive off-current R, placing the electrode in a sponge, pressing it firmly over the tumor on the opposite side of the abdomen from the I electrode, which is connected with the I switch; changing the commutator four or five times; then disconnecting I and connecting J and K, as shown in Fig. 1, placing the sponge with the positive electrode on the abdomen over the upper part of the tumor; this was continued two minutes; then the switches were connected for the general currents as in Fig. 1, these were continued two minutes, and the treatment was concluded by sponging the back as previously directed. This treatment was repeated daily for one week, when her menses appeared; they were less than usual at the commencement, and the hemorrhage was much less; the fifth day I placed a tampon of cotton wool containing ferri subsulphatis, gr. iij, zinci sulphatis, dried, gr. ij, and introduced it as far up as I could in the os uteri. The sixth day there was very little hemorrhage; the seventh she was able to resume the former treatment, which was continued till her menses appeared again; at this time they were nearly normal, and she was not confined to her room at all during this period. The flow ceased the sixth day from commencement. On the fifth day I prescribed the vitalized treatment with foot-bath as previously described, with this exception: the positive electrode was in the foot-bath and the negative in the hand of the operator,

until the last three minutes of the treatment, when the negative electrode was placed in the hands of the patient; this was continued two minutes when the current was reversed and this continued one minute; this concluded the treatment; the following day it was repeated; the seventh day she resumed again the former treatment.

She was under treatment eight weeks, when she left for home; promising to return if she was worse. The uterus was diminished about one-third in size and her general health very much improved. She returned four or five months afterwards. I then made an examination and found the tumor still smaller than when she left; as she was feeling quite well she wished to remain only for a few days' treatment. I heard from her a few months since; then she was attending to her household duties and felt no inconvenience from her former trouble.

(To be continued.)

ARTICLE II.—*Quantity and Intensity, as applied to Faradaic Electricity.* Read before the Chicago Society of Physicians and Surgeons, Sept. 22, 1873, by PLYM. S. HAYES, M.D.

It is a significant fact, that very few physicians understand the construction of the electrical instruments they use, and the principles that govern and modify the generation of electricity by the various kinds of apparatus. Knowing this to be the case, and that some essential principles have been overlooked in the manufacture of faradaic instruments, which have lessened their value as therapeutic agents, has induced us to place before the profession some of the overlooked principles. We hope by this means to be able, in a measure, to explain why different results have been obtained, by different physicians in similar cases, by the application of faradaic electricity.

A little more than forty years ago, Faraday discovered that instantaneous currents were generated in metallic conductors, either under the influence of similar conductors transmitting currents of electricity, or by the influence of powerful magnets. He even went so far as to use the magnetism of the earth—the greatest

of all known magnets—to generate these currents, which he termed currents of induction, or induced currents. This form of electricity is commonly called faradaic (from the discoverer of it) or induced electricity.

After the discovery of these principles, instruments for the generation of faradaic electricity came rapidly into use, as therapeutic agents, on account of the amount of electricity generated, the ease with which it could be manipulated, and the small size of the instrument.

The simplest form of the instrument consists of two coils, or helices of insulated wire, the one within the other, but thoroughly insulated from each other; within the inner coil, and extending through it, is the core or electro-magnet, of soft iron wires. Connected with the inner or inducing coil is a galvanic cell; there being intercalated in the circuit a rheotome, or current breaker. The ends of the wire which forms the outer or inductive coil, terminate in the poles.

It might be well, in order to get a clearer idea of what follows, to give at least the essential physiological differences between frictional and galvanic electricity. We have chosen these two forms because they occupy the extremes of that molecular force, and consequently their physiological actions are more distinctly marked. So different in their various phenomena are these two forms, that for a time some scientists thought that they might be two different forces, as unlike as magnetism and electricity. Since the discovery of Faraday they have been proven to be the same force, for by modifying the faradaic apparatus, electricity may be obtained, which in one case is identical with frictional, in another with galvanic, and in a third seems to combine in one—although in a limited degree—the properties of both of these forms. All of the differences in the physical and physiological phenomena of frictional and galvanic electricity, are due to the difference in degree of the *quantity* and *intensity* that each possesses.

Quantity, as applied to electricity, is that property in virtue of which electricity can produce a given amount of chemical action in a unit of time; while *intensity* in electricity is that property in virtue of which electricity can overcome resistance, such, for instance, as is encountered in traversing a poorly conducting medium. To illustrate this, the quantity and intensity of electricity might

be compared with quantity and intensity as applied to heat. For instance, the intensity of the heat found in the jet of the oxyhydrogen blow-pipe is much greater than that found in a blast furnace; but the quantity of heat found in the latter is much greater than that of the oxyhydrogen jet.

From the foregoing definitions it is readily seen that the galvanic current is of great quantity and small intensity, as compared with frictional electricity, in which intensity predominates, and quantity exists only in a slight degree. For instance, Weber has calculated that if the amount of positive frictional electricity required to decompose a grain of water were accumulated on a cloud at a distance of 3,000 feet from the earth's surface, it would exert an attractive force upon the earth of upwards of 1,500 tons. Thus it is that these two forms differ from each other simply in degree and not in character.

A few of the most important differences in the physiological phenomena of these two varieties of electricity, are as follows:

The galvanic current, when made to act upon the skin, produces a sense of heat, redness and inflammation; and even destruction of the skin and contiguous tissues may follow the application, if the current be powerful and the application be sufficiently prolonged.	If sparks from a common electrical machine be applied to the skin, a sense of prickling and pain is felt, and if the sparks are large, the skin is reddened and a papular eruption resembling the *lichen urticatus* is produced.
The effects of galvanic electricity on the muscles are to produce, at the instant of opening and closing the circuit, a contraction; and during the application of the current—if it is sufficiently strong—a tremulous muscular motion, and sensation.	Frictional electricity simply produces a muscular contraction at each discharge, provided the sparks be large.
Galvanic electricity affects prominently the nerve centres and nerves of special sense. With regard to the latter a sensation may be called forth which corresponds to a sensation peculiar to the special nerve, under the influence of the current; we can—so to speak—see, taste, smell and hear this form of electricity. Its action on the nerve centres is manifested by vertigo, syncope, nausea, and even convulsions.	Frictional electricity does not perceptibly affect the nerve centres and nerves of special sense (if possibly we exclude its action on the optic nerve), unless the shock be so severe as to endanger the life of the subject operated on.

Galvanic electricity tends to chemically decompose the fluids and solids of the body, at the place of contact of the applied electrodes.

The chemical effects of frictional electricity on the human body are not perceptible.

From the intermediate position that faradaic electricity occupies, it can, under certain conditions, produce similar effects on the skin, muscles, nerve centres, and some of the nerves of special sense, that an interrupted galvanic current of medium quantity and intensity does; and will also produce on the skin and muscles effects similar to that produced by frictional electricity. Combining, as it does, the properties of these extremes, its effects on the animal economy are not as distinctly marked as in the employment of the galvanic or frictional forms alone; and the results obtained in certain instances by faradaic electricity are different from those obtained by either of the other varieties.

Faradaic currents of different quantity and intensity may be obtained, first, by modifying the quantity and intensity of the galvanic or inducing current, and, second, by varying the length and diameter of the wire used in the construction of the coils.

In regard to the galvanic current, it should be generated from a single cell, or series of cells arranged as a single one, with large metallic surface. The amount of surface would have to be varied according to the form of battery used, to get the same amount of quantity in each case; for the different batteries differ from each other in electro-motive force. In this case *quantity* is the essential element to be sought for, if we desire a faradaic current of *great quantity;* for it is a self-evident truth, that from a given amount of a force you cannot generate a greater. Neither can you, from a given quantity of galvanic electricity, by means of a faradaic apparatus, generate electricity of greater quantity than that possessed by the inducing current, for then would perpetual motion be achieved. To illustrate this principle, let us represent the quantity of the galvanic current by ten, the quantity of electricity induced by this current in a faradaic apparatus would be represented by three or four.

The intensity of the induced current is proportional to the intensity of the inducing current.

The quantity and intensity of the faradaic current is still further modified by the length and diameter of the wire employed in the

manufacture of the coils. It is a well known fact, and one which is the underlying principle in the manufacture of several medical and telegraphic instruments, that a current of electricity is resisted, in its passage through a conductor, directly in proportion to its length, and inversely as to its diameter; thus a long or fine wire resists the passage of a current much more than does a short or thick wire of the same metal. The difference in the conductivity of metals need not be dwelt on in this connection, as copper is the one usually employed in the construction of the coils. If the wire is long and fine, considerable intensity of current is required to overcome the resistance offered by it; and, conversely, a current generated in such a wire will be of considerable intensity; such, for instance, as is generated by a Ruhmkorff's coil; the length of the wire in the outer coil in some of the largest sizes of these machines is sixty miles, and the diameter of the wire one-fifth of a millimeter. From such an instrument sparks of a number of inches in length may be obtained.

By shortening and enlarging the wire, keeping up all of the time the proportion between the outer and inner coils, currents are obtained which are of greater quantity and less intensity than are found in the Ruhmkorff instruments, or those usually employed for medical use, provided the galvanic current remains the same.

To recapitulate that which has been said in regard to the wire: "The thinner the wire the greater the tension of the induced electricity," is the statement made by Ganot. Wm. Crookes, in the *Quarterly Journal of Science*, speaking of the induction of electricity from magnets—for the laws discovered by Faraday regarding the generation of induced from galvanic currents are, in a measure, as applicable to the generation of currents from magnets—says, "the quantity of the current likewise differs according to the kind of wire surrounding the armature, a *short thick wire producing effects of quantity, and a long thin wire, of intensity.*"

The faradaic instruments for therapeutic purposes in general use seem to have been manufactured solely to produce a given amount of intensity, overlooking entirely the element of quantity.

That in many cases great benefit has been derived from the ordinary instruments, none will deny; but that the same amount of good may be obtained with less pain to the patient, and that results which have not been achieved by faradaic currents of intensity

have been by those of quantity, are clearly demonstrated by our experience.

With faradaic quantity currents, the deep seated muscles and those remote from the points of contact of the electrodes, but in the course of the current, may be felt to contract very markedly, while the intensity is not sufficient to produce the sensation of pain, so frequently experienced in the intensity currents. In fact, faradaic currents of great quantity affect the nerves of sensation only slightly.

That faradaic electricity will ever take the place of the galvanic we do not expect, for the latter has properties which it would be impossible to obtain in the former; yet we know that results can be obtained in the employment of electricity which have not been hitherto fully appreciated.

No. 123 Calumet Ave.

Article III.—*Cases from Practice.* By J. W. Brooks, M.D., Chicago.

Case 1. Sept. 1st, 1873, was invited at 1:30 o'clock P. M., to visit Mrs. L., a multipara, 24 years of age, under the care of a midwife, at No. —, —— Avenue. Said to have been in labor from twenty to twenty-four hours. On reaching the bedside found a peculiar spasmodic condition of the uterus; pulse at the wrist almost imperceptible; lips blue; incessant jactitation; hurried, grunting respiration; cool sweat over the body; great anxiety.

Administered McMunn's elixir of opium, and sent for professional assistance, to which Dr. McWilliams responded. The system in no way responded to the opiate. The child was forthwith removed with the forceps, and a free flow of uncoagulated blood followed, which did not coagulate afterward. The rupture appeared to be at the lower part of the uterus, near to the vagina. (Could not obtain an autopsy.) The hand passed readily into the abdominal cavity. The uterus was found well contracted below and to the left side. There was no further external hemorrhage. Stimuli were administered without result, the patient continued to sink, and died at 4:10 P. M. the same day. I learned from the attendants that the membranes gave way at 8 A. M. with a snap

and a gush of waters, and that nothing flowed afterward till the child was removed, and that it was at 8 A. M. that the restlessness and painful breathing commenced. I think that the rupture commenced at that hour, and that the blood that passed off was the accumulation of several hours. *Quære:* Is it usual for the blood under like circumstances not to form a coagulum?

I omitted to mention that there was a remarkably distinct varicosity of the veins of the vulva, extending some distance up the vagina.

CASE 2. Sept. 1st, 1873, at 8 A. M., was requested to visit Mr. N., a resident of Forty-ninth street, in haste. On arrival, found an atlo-axoid luxation incomplete, and a partial bilateral dislocation of the fifth cervical vertebra. He is a well developed, muscular man, of about 28 years. His sufferings were intense—perhaps we may say agonizing. He was numb from the axis down; had been very uneasy from the time of the injury, at 6 P. M. the preceding evening, to the then present time, and unable to move. It should have been stated that he was picked up unconscious, and returned only gradually to consciousness. The injuries had occurred on this wise: He was riding with his lady in a buggy, and when about to turn a street corner, the horse moving rapidly, he turned to look behind him, and in the act was tossed from his buggy, alighting on the top of his head apparently, and making a complete somersault. The chin was raised a little, turned to the left, and immovably fixed; the face cool, pale and bluish. He being half recumbent, the writer stood directly behind him, while an assistant placed a hand on each shoulder and there held firmly downwards. I then grasped the base of the skull on either side with a hand and made a counter-extension, and a gentle and forward rotary motion, and the atlo-axoid articulation was restored with a snap, attended with great relief. Still retaining my position, I placed one thumb on the spinous process of the fifth cervical vertebra and the fore and middle finger on the projecting portion of the side of the vertebra; pressing firmly with these, and with the other hand carefully rotating, slightly, and making counter-extension to the best of my ability, while my assistant pressed very firmly down on the shoulders, the vertebra was thus returned to its normal position with an audible click. Sensation and motion

were speedily restored. A napkin wrung from warm water was applied from the head to the first dorsal vertebra for forty-eight hours. September 3d, the patient was convalescing rapidly.

Case 3. Sept. 26th, 1872, was requested hurriedly to visit F. B., a delicate, pale boy of 8 or 9 years. On arriving, learned that on the previous evening, while playing at somersault in his father's parlor, he had injured his neck. Examination revealed a sub-atlo-axoid luxation. The chin was directed a little upward and to the right; the head was immobile; there was some numbness below the seat of injury, in all of the members of the body; he was exceedingly nervous; there was no intense pain, but, as he expressed it, "it hurt all the time;" with a pale, damp, cool skin. With an assistant to steady and hold down the shoulders, and standing directly behind him (he being half recumbent), with a hand on either side of the base of the cranium, and the forefinger separated from the middle finger so that one forefinger of each hand would come before the articulation, and the middle finger of each hand behind, I proceeded to rotate carefully, and at the same time to make counter-extension; presently an audible click announced the return of the parts to their normal position. Convalescence was soon established.

Article IV.—*Ante-partum Prolapsus of the Cord.* By J. E. O'Brien, M.D., Scranton, Pa.

Cazeaux speaks always of prolapsus of the cord as an incident of labor only; other authorities whom I have been able to consult, give no intimation of its occurrence at any other time. But the following case shows the accident as occurring at the sixth month of gestation.

January 4th, 1873. Mrs. H., six months pregnant, called me to find an umbilical cord appearing externally and strangulated by the os uteri. Her object in calling me was to know if anything could be done to prevent the miscarriage which previous experience had taught her to expect. She had no living children, but stated that a prolapsus of the cord had occurred to her once before, at the sixth month of gestation, and was followed by

abortion. The exciting cause had been a fall, she thought, and, in this second case, exertion in "white-washing."

I could think of no means of restoring the cord, that would offer any hope of saving the child, the means applicable to a case occurring at term seeming to be out of the question, with the os uteri firmly contracted and the fœtus too young to sustain an independent existence. Abortion followed in two days.

My object in publishing this case, is the same as that of the lady in sending for me.

ARTICLE V.—*Spread of the Specific Diseases—Paroxysmal Fevers—Marsh Fever produced by Obstruction of the Outlets of Subsoil Water.*

The following account by Dr. Derby,* of Massachusetts, will be found of interest.

The uneven surface of Massachusetts has allowed great resort to water-power, and thus dams and reservoirs have been formed which obstruct flow, and have raised the water level.

The reservoir, also, which is often constructed to supply water for the wheel, is a receiver of many impurities, and purifies itself little by movement, or if the reservoir is emptied, a foul bottom is exposed to the sun.

Formerly, indigenous intermittents in Massachusetts were very rare, but when they occurred they were often referred to the mill-dams causing obstruction, and producing wet, marshy soil. In 1828 a dam thus constructed on the Housatonic caused such a development of intermittent fever that the people obtained legal authority to remove the dam, on the ground of the injury to the public health. At the present time the exemption from intermittent fever is far less complete than it was formerly. "Twenty-five years ago it was taught in our medical schools," says Dr. Derby, "that intermittent fever was a disease almost unknown in Massachusetts, except when contracted in other places. * * * * The exemption of the people of this State from periodic fever

* "Third Report (1872) of the State Board of Health of Massachusetts." Boston: 1872.

seems to be far less complete at the present time. Intermittents have been observed in Chelsea, and the history of the cases carefully investigated, and their local origin proved, on lands reclaimed from a salt-marsh, and now covered with houses. Cases have been seen during the past year clearly originating in Boston. They have been reported of late years in various parts of the State, along the banks of streams in low lands, and also in the immediate vicinity of tide-water, and occurring in persons who had never lived elsewhere.

"Physicians have observed that in the treatment of typhoid or enteric fever, the number of cases in which quinine is found useful, not simply as a tonic, but as a febrifuge, has become very considerable.

"In parts of Connecticut, intermittent and even remittent fevers are now not only frequent, but severe; and the gradual enlargement of the area of malarious influence, from the latitude of Long Island Sound toward the southern border of Massachusetts, is a fact to which we may well give heed."

The cause of this extension is to a considerable extent fresh-water obstruction, and several examples are given; but there is in addition another form of water obstruction, which, says Dr. Derby, "is full of danger to the public health, and is counterbalanced by no commensurate claims to economic value. If the fresh-water obstructions need to be watched, some of the salt-water obstructions need to be demolished. If the river-dams and reservoirs are liable, when used for the single object of profit, to render public health less secure, the tide-mills in crowded neighborhoods are nuisances which should be abated."

The rise and fall of the tide has been used as a motive power in all convenient situations from the earliest settlement of the country. Of late years tide-mills have not been found profitable, but the dams remain, and in most cases their water is still used. When first formed, there were seldom any houses near them, but now there is a crowded population close to them. In the case of the "Cross-dam" at Boston, about 70 acres were kept filled in 1871 by stagnant salt water, for the sake of the power thus obtained for a grist mill. This affected the health and comfort of at least 200,000 persons. * * * * A case which occurred at Natal, and which was related to me by Dr. Cattell, of the 10th Hussars,

gives another interesting instance of an accidental obstruction acting somewhat in the same way. I give Dr. Cattell's memorandum in his own words:

"Fever of a severe and unusual type suddenly appeared on the coast northward of the Unguini river, and as a vessel had recently put into D'Urban, from Port Louis, disabled with Mauritius fever, the sick crew being landed at the Civil Hospital, a panic induced the Government to send down a Commission of Inquiry.

"Along a line of some five miles, a low hill range encloses a narrow belt of lagoons, themselves separated seaward by a low spit of sand, often in mounds, held together by juniper and iceplant, and pervious below to the water. To the south this range abuts on the Unguini, a large river; here, as it meets the sandy shore, sinking through and becoming shallow, having therefore a variable mouth, which changes after great floods. Six months previously, before the present hot season, an unusual rainfall, over a wide area near its sources, had brought down a large volume of water, destroying the bridge, and carrying trees, Kaffir houses, much soil, and a large mass of canes, refuse, manure, etc., from its banks and the low adjoining plantations.

"Previously opening near the lagoons, the river had now cut southward along the sandy shore and opened 600 yards or more further down, so that the seaward boundary of the lagoons extended right across its former mouth. The flow, instead of being toward the lagoons, was now directly away, and these were therefore not overflowed as deeply as formerly. The entrance to them from the river was found closed almost entirely by masses of vegetable matter, trees, canes, and canefield refuse, matted together to a depth of from four to six feet, lying always in the water, but now entirely submerged. All along the lagoons similar matter had been carried by the flow-water, and left partially submerged.

"Along the seaward face of the ridge, generally high up, houses were dotted, in every one of which scarcely any who remained had escaped the fever, which was most severe above the large mass of decaying matter near the old mouth, which affected every house to the leeward of the lagoons, but extended no further, and did not affect residents on the further (landward) side of the ridge. Adults and children, Kaffirs and Coolies, alike suffered. There were two local predisposing causes in operation, such as swampy

ground and brackish water, which causes, however, had previously been quiescent." * * * "I believe they might all be classed as ague of a severe type and as ordinary remittent." * * * *

"Some months later, fever of a different type appeared, also suddenly, in a small village at an extremity of D'Urban Bay." * * * * "Here, at low tide, the water retreats from 500 to 600 feet, leaving alluvium partly sheltered by mangroves. For some time the night-soil of the neighboring town of D'Urban, collected from boxes, had been carted and deposited here, not very far above the level ground on the slope." * * * "The type was enteric, with delirium, and considerable abdominal irritation, showing marked intermissions, as do most acute cases in this neighborhood, especially fevers." * * * "There seems no doubt that here the fever was due almost entirely to animal poison; that the sewage matter deposited on soil whose natural outfall was interrupted by salt embankments, sufficiently accounted for the outbreak which some supposed arose from effluvium of these novel, unpopular salt-works, or from tidal alluvium, or from mangroves, which had existed before the houses were built, and which lined the shore along the township in the immediate vicinity of streets hitherto without suspicion."

ARTICLE VI. — *Cholera — Latest Discussions in Germany on the Subject.*

The causes of the spread of cholera are of such interest to every one that it seems desirable to briefly notice the latest discussions in Germany on this subject.

The great reputation of Pettenkofer, his acuteness and able statement of his views, have insured his opinions a wide acceptance, and are at the present moment influencing the course of investigation, both in Europe and in India. If, as some suppose, Pettenkofer has been on a wrong track, his influence may unfavorably bias the investigation, and it seems important to exactly define his position and the value of his arguments. He has, in the course of years, changed several of his views, and has been subjected to some sharp criticism in consequence; and lately a very able and

thoughtful attack on his ground-water hypothesis, by Dr. F. Sander,* and to some extent by Kuchenmeister, has appeared.†

Pettenkofer has found it necessary to reply to Sander in a long article in his Journal,‡ entitled, "On the present state of the cholera question." In this he has defined his own views, and has discussed with great ability the general question of the spread of cholera.

A brief notice of these three essays will enable us to analyze and prove what Pettenkofer's opinions are at this moment.

Sander's conclusions are these: he does not deny that in the spread of cholera there is, to use the language of Pettenkofer, "a disposition given by time and place," or, as we should say, by conditions of season and locality.

In fact, this is one of the most obvious points in the spread of cholera; in India, the cholera seasons of special places are well known; and the prevalence of cholera in certain spots, and the exemption of others, have long been observed with the greatest interest.

Sander does not again deny that the condition of the soil may play a part in some instances in preventing or favoring the spread, but he considers such a part as non-essential, so to speak, and that the local favoring conditions, whatever they may be, need not be connected with the soil. Beginning his inquiry with a leaning to Pettenkofer's views on this point, he has gradually found it necessary to diverge from him, and has been obliged to attribute a great importance to infection, by means of the intestinal excreta, and to multiplication of the "cholera ferment" in the bodies of men.

Kuchenmeister has come also to pretty much the same conclusion. He considers cholera without men to be inconceivable; epidemics are produced sometimes by direct infection, more frequently by the aid of so-called "helping causes" in the ground.

As means of this spread, we have, he says, in India as in Europe, traffic and intercourse with cholera-sick men and places, and, before everything, proximity to their clothes, foul linen, house

* "Untersuchengen uber die Cholera in ihren Beziehungen zu Boden und Grundwasser." Von Dr. Fr. Sander. Cologne: 1872.

† "Handbuch der Lehre von der Verbreitung der Cholera." Von Dr. F. Kuchenmeister. Erlangen: 1872.

‡ "Zeitschrift fur Biologie." Band viii, p. 492. 1872.

utensils, and privies. The most probable carriers of the infecting matter are considered by Kuchenmeister to be the cholera dejections, and the failure of the so-named disinfection of the dejections in the ground, or in privies, is no proof against the view. That the cholera moves with the wind, Kuchenmeister considers not only unproved but as improbable, and experience is opposed to this view. Starting then from this point Kuchenmeister considers the "helping causes of place and season" to be air-temperature and rain; especially the permeability of the soil for the air-temperature and air-masses in the superficial and deep strata; and after these he considers that the putrefactive changes in the soil are of importance. As to temperature of soil he considers that it is tolerably certain that cholera will not spread if the temperature of the upper strata of the ground which are in relation to men, sinks under 54.5° Fahrenheit. The ground-water plays a part, he thinks, in the cholera spreading, but not that which Pettenkofer ascribes to it; and other conditions, especially the temperature of the soil, and the amount of water in the upper strata, are of much greater importance than the ground-water. With regard to the spread through drinking-water, this has been as often affirmed as denied in Europe as in India. "The worth of this opinion," says Kuchenmeister," is daily lessened among us."

Such, then, are the opinions of these two writers, which differ only from those received commonly in India and in England in the doubt expressed on the spread by drinking-water; a doubt also shared by Pettenkofer.

As already said, Pettenkofer replies especially to Sander in a long article. He refers to his own changes of opinion, and believes such changes to be inevitable with every one. He rates our knowledge of cholera low, but wishes to define his present views as carefully as he can.

He begins with a reference to the old terms of miasma and contagion, which he uses in the sense that "Contagion" is a specific infection-matter arising within the body of the person, and "Miasma" an infectious matter arising outside the body. He also does not deny that possibly some of these matters may spread in both ways, and if so, the old term, "contagious-miasmatic diseases," would be rightly applied to them, but, as he finally remarks, it must be proved that diseases do actually spread in both ways, and

he evidently holds it to be unlikely. Pettenkofer has thus stated again the old controversial phrases of the contagious and infectious conflicts of former days. He points out that, if there be a "contagious-miasmatic disease" (in the true sense of the word), it must be always possessed of the same properties, and must spread in both ways. We cannot suppose, he considers, that it may now spread entirely miasmatically, and at another time entirely contagiously.

He then observes that cholera, typhoid and yellow fever have many similarities in their spread. They are, he considers, importable, but not contagious diseases, but he refers for this opinion to some very weak evidence respecting yellow fever. Transportality of cholera by men and human intercourse, which is, he says, undoubted, is not to be taken as equivalent with contagious. There are places free from cholera, and which remain free; however frequently Lyons has been invaded by choleraic persons, no epidemic has ever occurred there. He argues this point, and the spread on board ship, at some length, and finally states that in the course of the observations he has made, his opinions have been altered in many ways; at first he stood, like so many others, with a predilection for the contagionist side, but was gradually, by the continued pressure of facts, driven from that position, and now believes that the customary contagious doctrine has been the greatest hindrance in our search after the nature of cholera, since our glances have not fallen on the right point, but in directions where what we seek is not to be found. He concludes "that cholera is carried by traffic, but is not on that account a contagious disease, that the causes of the increase of the cholera infection-matter, are to be sought in the surroundings of men, and not in the men themselves."

Of these surroundings he attaches, he says, an essential part to the soil. * * * * * He goes on emphatically to repeat the opinion he stated at the Cholera Conference at Weimar, in 1867: "We know that cholera is spread by traffic; we know that other additional circumstances are necessary, in order that an epidemic shall arise, and many men fall sick in one place. If only in a single case the participation of the ground is a matter which is indifferent, the same must be allowed in all other cases. I consider at present that those cases which appear as if the ground were unnecessary, are not properly analyzed. If we give up the

influence of the ground in a single case, then such influence is no longer necessary for all other cases."

With regard to the "drink-water hypothesis," Pettenkofer says he has proved that in many and heavy epidemics, the participation of the drinking-water was impossible. As he was driven to seek for other local influences in these cases, so he lost the right (according to his view) to lay more weight on the water hypothesis in those cases in which it was not disproved, than in those in which the influence of the drink-water was shown to be evil. He thus found himself always thrown back on the ground, as the seat of the local condition which determined the epidemic.

In expressing himself thus, Pettenkofer appears to disregard the strong positive evidence which has been accumulated, to show that the drink-water may carry the agent. He can undertake to say, and no doubt rightly, that in some cases the drinking-water was not in fault, but he stretches his inference too far, and nothing appears to justify him in the opinion which he seems to hold so strongly, viz., that there can be only one mode of spread. Pettenkofer then passes on to the consideration of cholera on board ship, which Sander considers as fatal to the ground and ground-water theory. Pettenkofer does not allow this, and enters on a long discussion. His argument appears to be this: in no case is the spread of cholera so infrequent as on shipboard, although the conditions there are more favorable to the spread of a contagious disease than in other cases. The specific cause (*die specifische ursache*) of cholera is from time to time spread by means of human traffic from India, or from other endemic sites. In this spread there is (besides individual disposition,) "a time and place disposition." There are places where cholera, often introduced, never spreads; there are times when in a place which it is known can have epidemics, it does not prevail.

Now, in ships, the cholera is introduced from land, but in by far the greater number of cases of ships at sea, the ship is like one of those places on land which want the local disposition, and which cannot, therefore be attacked. The attacks of cholera on shipboard die out, and generally restrict themselves to persons who, in all probability, have been infected on shore. In cases in which considerable outbreaks have occurred on shipboard, the cases are usually confined to those who have been in connection with some

particular place on shore; it attacks the passengers and not the crew, or one company of soldiers and not another, etc.

And yet he admits that there are some cases of real epidemic outbreaks of cholera on board ship. If we are to be consistent, and not to give up the etiological rule of the identity of the causes of cholera on land and at sea, we ought to ask, it is said, how the conditions of time and place which are necessary on shore happen in these particular cases to appear on board ship? No doubt the hypothesis of contagion would most easily explain these instances, but then by far the greater number of attacks on ship-board are not consistent, and all rational grounds are wanting to connect such epidemic outbreaks with contagion.

If cholera on board one ship has a contagious character, what prevents cholera from being contagious in all ships in which the infectious matter is introduced? * * * * There is something special on board these ships with epidemic outbreaks, which makes the part they play identical with that which the ground plays in epidemic outbreaks on shore. What that is, is quite unknown. We must renounce, with our present small knowledge of cholera, any presumption of being able to explain such occurrences now, but ships offer one of the best means of investigating certain points in the history of cholera.

If we only knew why the cholera infection material is so seldom operative on shipboard, we should be able to apply this fact at once to the case of places on land which enjoy immunity.

Passing on from this point, Pettenkofer refers to another criticism made upon his theory, viz., that he holds the opinion that the "cholera germ" (cholera keim) can increase only in the ground; he has expressly stated the contrary.

If x be taken to mean the "cholera germ," which is brought by human intercourse, and y the favoring local condition which allows it to grow, all he has contended for is, that this condition y is somehow or other furnished by the ground; but x and y may meet either in or out of the ground, either in the body or out of it.

A third reproach which is made—viz., that he has not given accurate and constant signs of a cholera ground, and has not precisely stated the necessary degree of the ground-water, *i. e.*, when the ground is too dry and when too moist to allow an

epidemic of cholera to occur—Pettenkofer admits to be true; he can only say, with Pio Nono, "Non possumus." We cannot precisely state these facts; we all have much to learn and much to forget; but it would be a great error, he thinks, not to discuss things because they cannot be rigidly defined.

He concludes his long and interesting article with a few remarks on the mode of investigating the part which the ground plays, and of the measures which should be adopted to check an outbreak of cholera.

If now I attempt to analyze Pettenkofer's views, I do so more with the view of attempting to define the course which inquiry should take, than with the intention of offering any decided opinion on the question of the necessary participation of the ground.

1. The point which Pettenkofer holds most decidedly, as well as Sander and Kuchenmeister, is that there is a specific cholera-producing substance which is spread only by human intercourse. Although he refers to Bryden's "Monsoon theory," and even uses the term himself, I gather that he does not mean that the cholera poison is carried by the wind, but merely that the monsoon gives favoring conditions, such as rain.

2. He then thinks that this cholera virus or miasm cannot, by itself, produce cholera in any case, but must meet with some unknown local condition or conditions in the ground or out of it, but if out of it, still furnished by the ground. If x represent the unknown cholera miasm, and y the unknown local conditions, then x must meet y to produce the agent which in a susceptible person can cause cholera. The reason which appears to have led Pettenkofer to adopt this opinion, is the fact that cholera sometimes spreads, and sometimes does not spread.

There are some places, with plenty of susceptible people, in apparently very bad sanitary condition, among whom the "cholera germ" is introduced, and yet who remain untouched; in other cases a wide spread epidemic follows. The old explanation of an epidemic constitution is untenable, as the places may be close together, the time and season may be the same, and all conditions apparently equal; yet they are not equal, for in one place, A, the disease spreads, and in the other, B, it does not. To use Pettenkofer's language, the unknown condition y exists in A, but not in B. Impressed by the undoubted fact, Pettenkofer has adopted

the conclusion that *y* is always *necessary*—that it is not simply a favoring condition, but that it is essential to the formation of that poison. * * * * It is not denied by the opponents of Pettenkofer that in a vast number of cases something else is operative than the mere introduction of the "cholera germ"; that some favoring conditions are in action, without which, in most cases, cholera will not widely spread; and that there may sometimes be influences from the ground; but they refuse to admit that Pettenkofer is justified in his absolute assertion of the necessity of ground influence.

3. Having thus, in his own mind, become persuaded that the "cholera germ" will not alone produce cholera, but must have local conditions in order to develop into the actual poison, Pettenkofer's third stage of argument is to show that these local conditions are connected with the ground. He is led to the ground by two roads: first, by exclusion, as he finds no other constant condition; second, by examination of the ground, which shows, he believes, that all places favorable to the spread of cholera exhibit certain characteristics of aggregation, moisture, and rise and fall of the ground, or subsoil water.

With regard to the first of these arguments, it is open to anybody to hold that Pettenkofer has too much neglected the introduction of cholera by water, food, and perhaps air; and, as respects the second argument, it cannot be doubted that at present the evidence which Pettenkofer, with such immense industry, has been able to array falls far short of demonstration; and that the decision whether the condition of the ground is really a matter of moment in the spread of cholera, and, if so, what is the exact condition which is thus favorable, are points which have still to be decided by the evidence alone admissible in scientific inquiries, viz., a sufficient number of well authenticated facts.

To me it certainly appears, at the present moment, that Pettenkofer's ground and ground-water theory is less probable than it appeared to be some years back. That the ground has an influence is highly probable, and is in fact a very old opinion; but when it is seen how very indefinite even Pettenkofer's own evidence is, and how uncertain are some of the cases he relies upon, I think it must be admitted that the enigmatical spread of cholera has not

been cleared up by him. Kuchenmeister's views, on the other hand, seem more in accordance with facts.

If, without presumption, I may venture to criticise Pettenkofer's mode of looking at this subject, I should say he has allowed himself to be too much impressed by the instances in which cholera does not spread after introduction. In attempting to explain, instead of simply admitting that we cannot yet explain such cases, he has passed beyond the boundary of ascertained facts, and in so doing appears to me to have lost his hold on what are really truths.

The view which looks on the cholera-poisoning as being carried by men, and then increasing and spreading more or less in various ways, by water, air, or food, according as it meets with favoring conditions, is more in accordance with facts than the view which assumes that two unknown quantities must be brought together in order to evolve a third.

Report on Hygiene for the year 1872, by Dr. E. A. Parkes, in British Army Medical Report for 1871. London, April, 1873.

ARTICLE VII.—*Translations and Extracts from Foreign Journals.* By Prof. J. H. ETHERIDGE, M.D., of Rush Medical College, Chicago.

The following article is taken from the *Gazette Hebdomadaire de Med. et de Chir.*, (Paris), 26th Sept., 1873.

Decortication (Barking) of the Nose, in Cases of Elephantiasis of that Organ. M. A. PONCET, Interne, Hotel Dieu de Lyon. Service of M. Ollier.

The skin and subcutaneous cellular tissues of the nose frequently become the seat of hypertrophic growths, bearing with them most disgraceful deformities, instances of which every one has seen. It is, indeed, certain noses in luxuriant vegetation which command attention by their inordinate development; they present, here and there, protuberances and depressions, accompanied by a purple or velvet tint, bordering on (wine) redness. The hypertrophy has a slow growth, but it increases every day; it is principally seen in drinkers. After a copious repast, with numerous libations,

the face is animated; the skin of the face, and especially of the nose and checks, becomes red; the circulation there seems more active; then, after a few hours the color becomes normal. With some drinkers the same cause will produce the same effect, *congestion*, which, transient at first, eventually becomes continuous; it produces a genuine dilatation of the superficial vessels.

The skin and the subcutaneous tissue then begin to thicken; the sebacious follicles, in great numbers in this region, become indurated, inflame, and their inflammation works disorder in the nutrition of these tissues, a sort of chronic inflammation eventuating in elephantiasis of the nose, (resulting.)

The hypertrophy, which by preference occupies the movable part of the organ, does not always present the same characteristics: at one time it is uniform, that is to say, all points rise equally; at another time, it rises unequally at some points and produces tumors, bumps (bosselures—nodules?) of various forms.

These latter become, by their dimensions, sources of functional troubles, that is, they constantly hinder, in a variable degree, respiration, articulation, and the prehension of food; by their volume they hinder binocular vision, and thus induce strabismus. Add to the deformity these troubles, and an offensive discharge, and it is easy to understand the sort of deformity the surgeon is occupied with and attempts to cure.

Many of the cases eventuating in elephantiasis of the nose are greeted with a smile, when they come to demand a cure for this nasal hypertrophy, and one is content to recommend no more drinking (for the future.) The advice is assuredly very good, it is of utility for the future, but for the present moment it does not benefit the deformity.

It is in cases such as this, that M. Ollier practices *decortication* of the nose. This expression, happily chosen for the surgeon, answers, as we shall see, the account (description) of the operation. The patient being anæsthetized, he incises the skin and the thickened tissues on the dorsum of the nose, then, seizing one of the borders of the wound with forceps, he proceeds to their dissection, being very careful not to touch the cartilages and to preserve intact the fibrous tissues which unite them. He also completely preserves the fibro-cartilaginous framework, in order not to compromise the form and functions of the nose—and, if we may

be permitted the comparison, he works upon (manipulates) this organ with bistoury and forceps as one would with the fingers remove the shell from a fresh walnut without breaking the covering —or would remove the bark of a branch without injuring the wood.

In the different decortications, made by M. Ollier, the operation offers no other peculiarity than a hemorrhage, resulting from the great vascularity of the organ removed. The use of sponges wet in ice-water, in staunching hemorrhage, allows the completion of the operation without a single risk.

With the finger introduced into the nostrils from time to time, as recommended by M. Ollier, one can easily be cognizant of the thickness of the tissues that he replaces, and of the integrity of the fibro-cartilaginous support, which above all things must be preserved.

The decortication finished, compresses, wet with ice-water, are held for a few moments against the bleeding surfaces; then the dressing is attended to. M. Ollier, in order to control all hemorrhage, applies directly to the wound, some picked up charpie saturated with a dilute solution of perchloride of iron, and places compresses over it, holding it all with a broad band. This first dressing should remain on many days; the charpie should be allowed to separate and fall off of itself, being raised up by suppuration; later, when there is no longer fear of hemorrhage, a simple dressing suffices. A hemorrhage may occur many days after the operation and be abundant enough to put the patient's life in danger, if it be not quickly checked. It is a fact, of the modifications that are observed in the elasticity and calibre of vessels of hypertrophied organs, that after a section their walls do not collapse as before (comme auparavant); they remain patulous, comparable in a measure to the supra hepatic (sus-hepatiques) veins after a section of the liver; furthermore, formed at the expense of tissue, rich in vessels, the proud flesh is itself very vascular, and, until cicatrization is complete, the surgeon should be on his guard against hemorrhage.

Cicatrization commences from the edges of the skin of the dorsum of the lobule of the nose, as well as from the skin of the nostrils; at the end of two or three months it is completed.

The writer then delineates one "observation" at length. The

patient, aged 55 years, was a heavy drinker, taking three or four bottles of wine with his dinner; his enormous nose was the butt of ridicule, and in those regions he was called the "Father of France" on account of it. "Upon entering the Dieu Hospital, his face presented, in front and on his cheeks, voluminous buttons of acne. The skin of these regions, thickened, was of a violet red color, but the nose, first of all, captivated attention. Comparable to a potato, it was divided into three portions, a middle and two lateral. The skin of a lively red, of mammillated appearance, furrowed (marked) by bluish vesicles, was studded with large buttons of acne. The left part had the form and volume of a chestnut; attached to the middle part, it was movable, and the patient called it *the nut*. The right part was a little less voluminous, but possessed the same characteristics.

"The patient being chloroformed and kept in the upright position, in a high chair, the head turned back against the chest of an assistant, M. Ollier performed decortication. He incised the skin upon the median line, the incision extending from the lobule to the anterior border of the (proper) bone of the nose; he seized the cutaneous flap with the forceps and dissected out the fleshy masses as far as the sound skin. Their weight was forty grammes. His principal care during the operation was to not touch the different cartilages which give to the movable part of the nose its form and suppleness."

Repeated hemorrhages annoyed the surgeons, during the process of healing of this patient's nose, and a fatal result was, with great care, evaded. Eventually, recovery greeted the efforts made to cure.

"The nose now has a normal shape, its volume is the same as that of an ordinary nose; the tissue of the cicatrix is less supple than the adjoining skin, leading one to suppose that an operation had been performed."

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SKILL.

The sagacity and accuracy of diagnosis, which the French physicians exhibit, are greatly to be admired. The Paris correspondent of the *London Times and Gazette*, writing under Sept. 22nd, gives the following instance:

"A woman aged about 40 years was suffering from facial hemi-

plegia on the left side, accompanied by amaurosis of the right eye. The patient was subject to epileptic fits and the paralytic symptoms which first affected the left side were becoming manifest on the right side of the face when the patient was carried off by cholera, which she caught in the ward. During her lifetime, Dr. Ball (the attending physician) had diagnosed a tumor at the base of the brain over the petrous portion of the right temporal bone and compressing the nerves that pass over and through it. The death of the patient offered an opportunity for verifying the diagnosis. But this was not the only point of interest in the case, for, during the life of the patient, it was not sufficient to diagnose a tumor in the brain, but what the nature of that tumor was, and, in an able lecture by Dr. Ball on the subject, he referred to the almost insurmountable difficulties that beset the question. One of the means employed for arriving at anything like a correct diagnosis consists in the use of therapeutic agents. For instance, where syphilis is suspected, as it was in the case under notice, notwithstanding the protestations of the patient to the contrary, the usual anti-syphilitic treatment should be adopted. Accordingly Gibert's syrup (mercury and iodide of potassium) was given, and was followed by marked and rapid improvement in the state of the patient. But what added to the difficulty of the diagnosis was, the patient had no marks of syphilis on her body, and even at the autopsy Dr. Ball felt some hesitation in pronouncing the tumor to be of syphilitic origin, so much did it resemble in size and consistence a glioma; but a small spot of disease on the internal surface of one of the parietal bones removed all doubt in the matter."

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OZONE AND CHOLERA.

The *Berlin Klinische Wochenschrift*, No. 34, contains an article from Prof. von Pettenkofer, prompted by the recent outbreak of cholera in Europe, the last season. He shows how little is known of the connection between epidemic visitations and deficiencies of ozone in the air at such times. Many hold the position now, that deficiency of ozone is one of the first prerequisites to an epidemic outbreak. The learned Professor avers that we are not in possession of enough facts to settle this question, as all methods heretofore employed do not estimate accurately the amount of

ozone contained in the atmosphere. Instruments used are ozonoscopes instead of ozonometers—they tell the presence but not the amount of ozone. The principal defect in observations made is, that no account has been made of the amount of air which in a given time comes in contact with the ozone papers. The Professor induced Dr. Wolfhuegel to make observations with the iodized paper in the open air and within doors. The result is very instructive. One thousand litres of air, out doors, constantly induced obvious reaction, while the air of the different rooms of the physiological laboratory of Munich (large—and quite uninhabited) did not induce the least reaction, even when 12,000 or 15,000 litres of air were brought in contact with the instrument. This fact is the more remarkable, as it is well known that air in rooms, although doors and windows are closed, is continually changing, if even only in a slight degree. "As we, therefore, live in our dwellings for the most part without ozone in the air, the smaller or greater quantity in the open air cannot exert any great direct influence on our well being." He does not, however, assert that the amount of ozone in the free atmosphere may not play an important part in the economy of nature; but we sadly need some method of showing with exactitude the variations in this amount.

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TACTUS ERUDITUS.

L' Institut for Sept. 17, 1873, contains the following, concerning the normal pulse, by Professor Bouillard, communicated at the Academy of Sciences:

"It is possible to distinguish four in place of two periods in the normal pulse, *i. e.*, a first pulsation, separated by a period of rest from a second pulsation, much more feeble than the first, and itself followed by a period of rest. The observation must be made on a person with a slow pulse of not more than forty, in order to become convinced of the truth of this statement. M. Bouley observed that while his colleague was making his statements he tried in vain to get this double pulsation on himself. M. Bouillard replied, that he could well believe this, for during thirty years he had never suspected the existence of this double pulsation, which can only be easily perceived in persons with slow pulse."

The following articles are reported in the *Gazette Hebdomadaire*, Oct. 3rd, 1873. They are extracts of papers read before the "Forty-Fifth Congress of Naturalists and Physicians of Germany, at Leipzig, for the year 1872."

Carbonate of Ammonia and Uræmic Poison. By PROFESSOR ROSENSTEIN.

[Condensed from a lengthy paper. The main features are old—one or two, however, have never before appeared in print. ED.]

"Carbonate of ammonia introduced into the system, produces the complex phenomena which are comparable to those of epilepsy or to certain uræmic accidents.

"The convulsions which this poison provokes are of cerebral origin, since they are not produced after separation of the cord from the brain; they are probably the direct result of the action of carbonate of ammonia upon the same elements of the encephalic centres, and not an excitation, transmitted by the great sympathetic or by the vagus, and reflected under the form of a convulsion.

"Morphine, chloroform, chloral, are without any action upon the progress of the poison.

"Unstriped muscles escape the convulsive action. Abortion has never been the consequence of a parallel intoxication in animals.

"Carbonate of ammonia is eliminated by the kidneys, and its action is very ephemeral and fugitive when these latter are intact. A small quantity is also eliminated from the lungs. According to Prof. Rosenstein the essential difference of action of carbonate ammonia and uræmic poison rests wholly in this fact: the former provokes only epileptiform phenomena, while the second may produce various accidents, coma, convulsions, delirium. In the cases where the uræmic poison produces epileptic attacks, or where one encounters carbonate ammonia in the blood, he should not accuse the latter, because its presence one is not always able to find in parallel cases, and because the quantity found in the blood of animals is by no means in proportion to the intensity of the epileptic phenomena.

"Finally, Prof. Rosenstein added that the accidents following vesical and prostatic affections and called *ammoniemia*, should be clearly separated from carbonate ammonia poisoning. Epileptic

symptoms characteristic of the latter intoxication are absolutely wanting in *ammoniemia*."

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BROMINE IN CROUP.

"Dr. Schuetz, of Prague, spoke of the use of bromine in croup. He has obtained, he said, excellent results by inhalations of this metalloide; he obtained uniform success with the following: 50 centigrammes of purified bromine, 50 centigrammes of bromide of potassium, in 90 grammes of water. Dr. Goltwald confirmed the truth of these assertions, and asserted that the diphtheritic (faucal) membranes lose, under the influence of this precious and novel agent, their consistence, and can be removed very easily. In support of the observations of these two authors, we may say that within the last year, during our residence in the Children's Hospital, we placed some diphtheritic membranes in a concentrated solution of bromine, and to our great surprise, we saw them dissolve in less than ten minutes. Their solubility is less rapid in the presence of bromide of potassium. They do not entirely disappear in the latter and bromine, sooner than an hour."

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PNEUMONIA.

"Dr. Raczorowsky read a paper on the treatment of *acute uncomplicated pneumonia*, founded on pathological grounds, new, and otherwise sound. He considers pneumonia as an infectious disease, due to the introduction of a vegetable parasite into the larynx. He cites cases of epidemic pneumonias, and endeavors to prove that the disease commences in the larynx and thence extends to the bronchi along the mucous passages. The therapeutical indications involve the four following points: 1st, To expel the parasites, the originators of the disease, by the aid of vomiting, especially by the aid of tartar emetic. 2nd, To combat or moderate the local irritation. (This second indication is accomplished, according to his view, effectually, by means of morphine hypodermics, renewed every six or eight hours; this therapeutic measure, in calming distress, fulfills equally well the 3rd indication.) 3rd, To combat reflex phenomena. Lastly, tonics and appropriate regimen (wine, milk and soup) answer the fourth indication, according to the author—sustain the patient's strength."

Selections.

Notes on the Pneumogastric. By J. F. Alleyne Adams, M.D., Pittsfield. Read before the Massachusetts Medical Society, June 3, 1873.

[Continued from page 627.]

Influence of the Pneumogastric upon the Stomach.—As early as 1801, Bichat observed that irritation of the pneumogastrics produced contraction of the muscular coat of the stomach. This fact has been confirmed by Tiedemann, Gmelin, and more recently by Longet. The last named author has likewise observed that these contractions are very marked during stomach digestion, but are wanting when the stomach is empty. He has also found that irritation of the splanchnic nerves, while it produces movements in the intestines, does not affect the stomach. When the pneumogastrics are irritated, the contractions of the stomach are tardy, resembling the action of the sympathetic nerves upon unstriped muscular tissue. From these facts, Longet concludes that the motor nerve-filaments of the stomach, although contained in the pneumogastrics, are derived by anastomosis from the sympathetic system. We have already seen that the pneumogastrics receive, in the neck, a large supply of sympathetic fibres, from the cervical ganglia.

The effects of *section* of the pneumogastrics upon the stomach have been clearly demonstrated by Bernard. He found that upon division of these nerves, the contractions of the muscular walls instantly ceased, the mucous membrane lost its turgescence and became pale, the secretion of gastric juice was arrested, and the sensibility of the organ was abolished. Schiff, however, has found that the movements of the stomach, although immensely diminished in activity, are not entirely abolished, for substances may still be very slowly passed to the pylorus. These movements he attributes to local irritation of the intramuscular terminal nervous filaments. It has been asserted by Tiedemann and Gmelin, that digestion, arrested by section of the pneumogastrics, may be, to a certain extent, re-established by galvanization of the peripheral extremities of the divided nerves.

Section of the pneumogastrics effectually prevents the action of emetics and cathartics. This fact has been established, and its causes most thoroughly investigated, by Prof. Horatio C. Wood, Jr., of Philadelphia, in a most elaborate and conclusive series of experiments.* These were fifty-one in number, upon dogs, cats

* Horatio C. Wood, Jr., "On the Influence of Section of the Cervical Pneumogastrics upon the Action of Emetics and Cathartics." *American Jour. of Medical Sciences.* Vol. ix. 1870.

and rabbits, most of them being vivisections; and the results may be concisely stated as follows:

1. After section of the pneumogastrics, the largest doses of such emetics and cathartics as arsenic, tartar emetic, veratria, croton oil, gamboge and calomel, with rare exceptions, failed to produce vomiting or purging.

2. In these cases, there was no secretion of gastric or intestinal mucus, whose production in large quantities is the usual result of these drugs, and is essential to their action.

3. These results are not due to non-absorption of the medicines, for these and other poisons produce death quite as speedily as when the nerves are not divided.

4. The absence of purging cannot be explained by failure of muscular action, for the peristaltic action of the bowels continues after section of the pneumogastrics.

5. One probable explanation of this phenomenon lies in the accumulation of carbonic acid in the blood; for animals, hypodermically injected with veratria, but with nerves intact, immersed in an atmosphere of carbonic acid, died without vomiting or purging. This cannot be the sole cause, however, for enough carbonization of the blood is required to produce insensibility, while, after section of the nerves, vomiting and purging are prevented, long before this stage is reached.

6. A second cause is probably the interference with the circulation of the lungs backing up the blood in the pulmonary artery, consequently in the right heart, and finally in the portal circulation, arresting the action of the mucous glands.

7. A third cause is perhaps shock.

8. The opposite results obtained by Brodie and Reed may be explained by the occasional failure of section of these nerves to affect the pulmonary circulation.

Dr. Wood, therefore, attributes the stoppage of vomiting and purging by section of the pneumogastrics entirely to arrest of the secretory function of that nerve, but seems to leave out of the question the reflex function of the medulla oblongata, by which gastric irritation is transmitted from the pneumogastric to the phrenic nerve, and which doubtless contributes to emesis, in those cases where the emetic is given by the stomach. In these cases, the irritation of the emetic, transmitted to the medulla by the centripetal fibres of the vagus, excites simultaneously the secretory filaments of that nerve, filling the stomach with mucus, and the excito-motor fibres of the phrenic, causing spasmodic contraction of the diaphragm. In cases of cerebral vomiting, the emetic influence seems to be transmitted, at first, entirely through the phrenic, hypersecretion not commencing until the stomach is emptied of its alimentary contents; and, in the case of some of the most prompt emetics, such as sulphate of zinc and turpeth

mineral, the reflex action upon the phrenic doubtless precedes that upon the secretory filaments of the pneumogastric.

In this connection, it will be interesting to consider the relation of the pneumogastric to the etiology of migraine or sick-headache, especially since the subject has been so clearly and beautifully brought to the notice of the profession by Dr. Anstie in his work on neuralgia, and also in recent numbers of the *Practitioner*.* Concerning the nature of this distressing and obstinate affection, the most diverse opinions have been and are still held. Of recent writers, we find Du Bois Reymond maintaining that it is due to a tetanic condition of the vaso-motor nerves of the affected side of the head, the pain being analogous to that felt during tetanic contraction of voluntary muscles, or the unstriped muscles of the uterus, intestines, etc. Moellendorf, on the other hand, thinks that hemicrania is based on the appearance of a paralytic condition of the vaso-motor nerves controlling the carotid artery of one side, which causes relaxation and distension of the arteries of the brain. Dr. Anstie differs from both these writers in calling migraine a trigeminal neuralgia, a view which has, of late years, been pretty generally held by the profession in England. There is one essential point, however, in which Dr. Anstie takes an independent position, and that is, in locating the primary lesion in the medulla oblongata, instead of the chylo-poietic viscera, as is more commonly believed. Migrainous pain, he contends, means an atrophic molecular irritation in the trigeminus root, and migrainous vomiting means a similar process in the vagus root. That is to say, an irritation in the floor of the fourth ventricle, being propagated in one direction by the trigeminus, gives rise to pain, and in another direction by the vagus, upsets the stomach. He admits the frequency of simple dyspeptic headaches, with vomiting and a foul tongue; but a true migraine he describes as a trigeminal neuralgia, complicated with vomiting, though the tongue is clean, occurring at regular intervals, induced by over-fatigue, and not by over-eating, beginning in early life in persons whose family history shows nervous disease, and passing off in middle life, or merging into some other form of nervous affection, as epilepsy, asthma, angina pectoris, or persistent facial neuralgia. In accordance with this view, his treatment is strongly tonic; fasting is discountenanced, and the patients are put upon an abundant diet, with cod-liver oil. Drastic cathartics are considered pernicious, as weakening the digestive power, and reducing the general strength. The indications during an attack, he maintains, are entirely for the relief of pain and production of sleep. For this purpose, he relies chiefly upon caffeine, given by the mouth if it can be borne, otherwise

* F. E. Anstie. Neuralgia and its Counterfeits. London: 1871.
Ibid. A Clinical Lecture on Migraine. *Practitioner*, November and December, 1872.

hypodermically. If this fail, he resorts to the hypodermic use of morphia. Dr. Allbutt* replies to Dr. Anstie, contending that gastro-hepatic disturbance plays the most important part in the production of this affection; but the difference between these two gentlemen seems to be chiefly one of classification, for the cases which Allbutt considers typical are not admitted by Anstie to be true migraine. In this country, I am sure but a small minority of the sick-headaches can be classed under Anstie's definition of migraine, for the most frequent cases appear to be such as Chambers† so graphically describes, and which are dependent upon the centripetal rather than the centrifugal function of the pneumogastric.

The researches of Dr. Waller, of Geneva,‡ upon the effects of compression of the cervical pneumogastrics, for the relief of various nervous affections, have been reserved for the close of this paper, as they bear upon all three of its divisions. Although the cases reported are few, they possess a strong interest, both in reference to the importance of the results and the physiological mechanism whereby these results are obtained. He reports five cases, illustrating the effects of pressure upon persons in health, and four cases in which it was applied as a therapeutic agent. The pressure is applied with the thumb, over the carotid artery on one side, usually a little below the angle of the jaw, the thumb being moved until a sensitive spot is found, which he considers indicative of the presence of the vagus. It will be remembered that the nerve lies in the posterior groove between the carotid artery and the internal jugular vein. The symptoms produced in his own case are thus described: "A moderate pressure soon occasions a deep-seated sensation, of a peculiar benumbing character, in the head, which scarcely amounts to pain." Then follows "a sense of languor and of fainting, as if 'going off,' which is so manifest that, if the head and body be not supported, and if pressure on the nerve be continued, complete syncope ensues. Simultaneously, other symptoms of a respiratory, cardiac and gastric nature make their appearance. The respiration, at first arrested for a few moments, becomes heaving and retarded; the heart's action, depressed in force, is disturbed and irregular, as may be felt by the pulsation of the carotid, under the finger. The gastric symptoms are marked uneasiness over the stomach, sometimes amounting to nausea and even vomiting."

In the other cases, the effects were similar, but the heart's action was reduced in frequency as well as in force. In two of them, the

* Clifford Allbutt on Migraine. *Practitioner*, January, 1873.

† On the Indigestions. 1870.

‡ Augustus Waller. On the Effects of Compression of the Vagus Nerve, in the Cure or Relief of Various Nervous Affections. *Practitioner*, April, 1870.

cheek and ear of the side upon which pressure was made were observed to be paler and of lower temperature than those of the opposite side; and in one, there was slight protrusion of the eye-ball.

These symptoms Waller attributes to an irritation by pressure of the trunk of the pneumogastric and the cervical cord of the sympathetic, which lies beneath it, so that it is impossible to make firm pressure upon the one without also pressing upon the other. By comparing these symptoms with the effects of galvanization of these nerves, we find them to be identical. The retardation of the heart's pulsations, and the slow, heaving respiration, result from irritation of the inhibitory nerve-fibres of those organs in the vagus; the diminution of arterial pressure is due to irritation of the depressor nerve, and the nausea may arise from irritation of gastric nerve-fibres, or may be wholly or in part dependent upon the faintness. The pallor and reduction of temperature of the cheek and ear, and protrusion of the eye-ball, are symptoms referable to irritation of the sympathetic, being among the characteristic symptoms of Basedow's disease, an affection whose primary lesion is in the cervical sympathetic ganglia, or the adjacent cilio-spinal centre of the spinal cord. The peculiar benumbing sensation in the head is probably caused by cerebral anæmia, from irritation of vaso-motor nerves. With regard to the faintness and nausea, it is difficult to say which nerve contributes the most to them, for they may be induced by galvanization of either the vagus or sympathetic. Waller lays the most stress upon the irritation of the vagus; but, as it is impossible to press upon this, without also pressing the sympathetic cord, the two sets of symptoms are necessarily simultaneous and liable to confusion.

Previous writers, who had made use of pressure upon the neck, supposed its effects to be due to obstruction of the arterial or venous circulation, and Dr. Waller himself shared this belief until 1861, when he became convinced that these phenomena are of purely nervous origin. Dr. Parry, of Bath, was the first to apply practically, in the early part of this century, what he termed compression of the carotids, for inducing sleep, and for the immediate relief of attacks of hysteria and epilepsy; but long before his day, Aristotle had written "that if the veins of the neck become compressed exteriorly, one sees a man shut his eyes and fall down senseless, as if he were strangled, although he is not so." But Waller shows that compression of the carotid arteries will not induce the symptoms described, adducing the fact that, in animals, both carotids may be tied, without producing any disturbance of the heart's action, or of innervation. In man, too, the ligation of one of the carotids gives rise, in the great majority of cases, to no immediate symptoms of a marked character, the secondary symptoms which occasionally supervene, such as convulsions, coma, collapse, etc., being of a totally different nature, and generally

attributable to lesions of the brain. In those rare cases in which impaired eyesight and syncope have immediately followed the ligation of the artery, it is likely that the vagus or sympathetic nerves, or both, have been included in the ligature; for, when such is the case in animals, the symptoms are found to be similar. Ligation of the internal jugular vein has also been frequently performed, without any peculiar symptoms resulting, although a case is within my knowledge where ligature of one of these veins, for hemorrhage, was followed by coma of three days' duration. Even in this case, it is not unlikely that the nerves were included in the ligature. Simultaneous compression of both internal jugulars would undoubtedly produce some cerebral congestion, whose symptoms would, however, differ essentially from those described by Waller; but it is probable, from the manner in which the pressure is made by him, that the circulation in these veins is but slightly, if at all, impeded. Taking these circumstances in connection with the known effects of irritation of the vagus and sympathetic nerves, we may safely conclude that Waller's views are sound, and a valuable addition to medical science.

The cases which he reports, in which a therapeutic application was made of compression of the pneumogastric, are not sufficiently numerous for generalization, but are very striking and suggestive. In one of them, violent nervous disturbance of the heart, with hysterical symptoms, came on in a lady suffering from an attack of acute rheumatism. Compression was made, first of one vagus, and afterwards of both. In a few minutes, the agitation had subsided, the heart's action became quieter and more regular, and finally, all the nervous symptoms subsided. A few minutes afterward she sank into a steady sleep, and, on awakening, was perfectly quiet, and the cardiac symptoms never re-appeared.

Another case was that of a lady, who, in consequence of a fall on the previous day, had severe neuralgia of the head and back, hyperæsthesia of the ulnar and median nerves, much mental excitement, a small pulse, at eighty, and frequent fits of obstinate vomiting. Pressure was applied to the left vagus. The result was perfect quietude, with laborious breathing, for about ten minutes; pulse weak and irregular. After removing the pressure, the pulse fell to seventy, and became full and regular, the patient lying quiet, and apparently unconscious, for upwards of ten minutes more. When she came to her senses, the vomiting had ceased, and did not return. The pain and excitability had left. The fullness of the pulse remained for some hours.

A third case was that of a lady with an irritable stomach, the sequela of gastritis, who had frequent attacks of spasmodic vomiting. One of these attacks was quieted by Dr. Waller, by pressure on one of the vagi, and subsequently the patient acquired the habit of making the pressure herself, when nausea came on,

and always with the effect of quieting the stomach and preventing emesis.

The fourth and last case was that of a young lady who had suffered for several months from a severe hemicrania, recurring periodically, every day. In this case, Dr. Waller resolved to make use of pneumogastric compression as a "perturbating" agent, as he expresses it, and, to that end, while the patient was in the sitting posture, made strong compression of both vagi. Syncope occurred immediately, and she remained quiet and unconscious for two hours, although the respiration and heart's action were regular. The result was, that she had had, in the two years intervening between this treatment and the report of the case, not the slightest return of the hemicrania.

We ought not to leave Waller's pressure method without referring to Rothroch's cases of the therapeutic application of *ice* to the neck, in the region of the pneumogastric.* This was done in cases of hysterical delirium, one being idiopathic, and the other following the use of an anæsthetic; and also in a case of suspended respiration, in etherization.

In all the cases, the application was immediately followed by a deep, heaving respiration, and restoration to consciousness, with muscular relaxation. There was no faintness, however, as is the case when pressure is made; and no mention is made of any retarding of the heart's action. It is difficult to tell in what way the ice acted, in these cases. Dr. Rothroch supposes that it, in some way, supplied the *besoin de respirer*, and that shock, also, was a not unimportant factor. Shock, however, was not the sole agency, for when the ice was applied to the *head*, no effect was produced. This mode of treatment is so easily applied, that it is to be hoped it may be given a general trial.

In closing this paper, it need only be said, that the fear of adding unduly to its length has necessitated the omission of much that properly belongs to the subject, such as the relations of the pneumogastric to the larynx and to the liver, and the various forms of pneumogastric neuralgia. The object of the essay will have been accomplished, if it has succeeded in reviewing, with clearness and accuracy, the most recent investigations concerning some of the more obscure functions of the vagus; and, while showing what brilliant results have already been accomplished, indicating the yet unopened mines of wealth that remain for the reward of future explorations.—*Boston Med. and Surg. Journal.*

* J. T. Rothroch. Ice to the Neck in Hysteria, and also in Suspended Respiration. *Philadelphia Medical Times*, Vol. iii, No. 53, p. 67.

Prof. Meynert's Method of Examining the Brain, etc. By JAMES J. PUTNAM, M.D.

In an interesting paper by Dr. Burt G. Wilder, entitled Cynophrenology, which appeared in the Journal of January 23, ult., allusion is made to the insufficiency of our present methods of gauging the relative excellence of the different mammal brains.

It is remarked with truth that neither the absolute size of the brain, nor its relative size as compared with the whole animal, nor the number or complexity of its fissures, satisfactorily indicates its quality. The first test would place the brain of the elephant and the whale too high in the scale, the second, too low.

There is, however, one test, first suggested, as I believe, by Prof. Meynert, of Vienna, which seems to be a satisfactory and practical one. That is, stated briefly, the relation in point of size or weight between the corp. quadrigem. and the cerebral lobes; or, in other words, the relation in point of development between the so-called "posterior division"* of the caudex cerebri (Hirnstamm) with its ganglia of origin, and the "anterior division" with its ganglia, *i. e.*, between the tegmentum cruris cerebri with the thalamus opticus and the corp. quadrigem., and the pes (or basis) cruris cerebri with the corpus striatum and nucleus lenticularis.

This latter tract (the pes cruris) is concerned according to Prof. Meynert, almost exclusively in the transmission of voluntary impulses to the muscles, and stands, therefore, in a fixed relation to the cerebral lobes, in which the voluntary impulses are originated, throughout the entire mammal series. The development of these two structures, viz., pes cruris and cerebral lobes, culminates in the brain of the adult man, whereas the tegmentum cruris with the corp. quad., etc., find their greatest development in the brains of the lower mammals, as the following table will indicate:

	MAN. Per cent.	APE. Per cent.	DEER. Per cent.
Height of basis cruris cer. compared with that of tegmentum	1.1	1.3	1.5
Weight of cerebral lobes compared with that of entire brain	78	70.8	62
Weight of corpus striatum, with the nucleus lenticularis, compared with that of the entire caudex cerebri	50	40	33.3
Weight of thalamus opticus compared with that of the entire caudex cerebri	19	22.9	30

* Compare: The Anatomy of the Mammal Brain, by Theodor Meynert, Stricker's Manual of Histology, American edition; also, an analysis of the same in Brown-Sequard's Archives of Scientific and Practical Medicine for February, 1873; also, Ueber die Bedeutung der Zweifachen Ruckenmarksursprunges vom Grosshirn. Sitzungsberichte der Koniglichen Academie der Wissenschaften. Bd. lxi., H. iii.

A table is annexed to the paper "Ueber die Bedeutung des Zweifachen Ursprunges des Ruckenmarkes, etc.," showing that, among the large number of mammals examined with reference to that point, in none did the development of the pes cruris equal that to which the corresponding part of the human brain attains.

This seems a not unsuitable place for recording Prof. Meynert's manner of examining the brain in the autopsy room, which is of value because it permits, more than any other, of the exact localization of defined lesions, without at the same time so mutilating the parts as to make them unfit for subsequent microscopic or other examination. The method aims, in the first instance, at the enucleation of the cerebral ganglia from their bed in the white substance of the lobes, so that all the surfaces of these parts may be freely examined.

Each cerebral hemisphere, according to Prof. Meynert, presents at both surfaces the form of an arch, of which one branch is represented by the frontal extremity, the other by the temporal extremity of the hemisphere.

The lumen of the arch of the inner surface is the lateral ventricle, of that of the outer surface the fissure of Sylvius. At the bottom of the fissure of Sylvius lies the island of Reil; directly beneath, and scarcely separated from this, is the surface of the nucleus lenticularis,* a cone-shaped ganglion which lies crosswise in the axis of the arch. Surrounding this, in a curve concentric with that of the main arch, is the corpus striatum (nucleus caudatus), whose large anterior extremity (caput) reaches forward and downward, buried in the frontal lobe, to the anterior perforated space, where it is nearly met by the dwindling posterior extremity (cauda) which curves backward and downward along the lateral ventricle, in which it is everywhere visible, nearly to the extremity of the temporal lobe.

The proposed dissection throws these two false arches into one true arch by cutting out this ganglionic mass which fills its lumen.

The knife has for its guide, in the fissure of Sylvius, the limits of the island of Reil; in the lateral ventricle, the border of the gray surface of the corpus striatum which runs along its inner angle. The principal details of the operation are as follows: †

The brain, removed in the usual way, is laid down upon its convexity, and, the membranes having been torn away as far as is requisite, the temporal lobe on both sides is dissected upwards by a series of cuts opening into the lateral ventricle on one hand, and the fissure of Sylvius on the other, and made in accordance with the rule given above.

* Nucleus extraventricularis corp. striat.

† Given from memory; I do not know that they are to be found in print.

The next step is to raise the medulla oblongata and cerebellum, and tear away the membranes beneath them which cover the great transverse fissure of the brain. Then, by a second series of cuts made from behind forwards, the mass of ganglia, principally at that part the thalamus opticus, is separated from its connections with the occipital and parietal, and the posterior half of the frontal lobes.

It only remains to enucleate the caput corporis striati from its bed in the white substance of the frontal lobe. This is done by laying the knife transversely on its flat with its edge just in front of the anterior perforated space, and cutting forwards and downwards. If the cut has not been carried forward far enough to surround the bulging head of the ganglion completely, the gray color of its cut surface will reveal the fact. The entire operation, apparently so complicated, is after some practice performed in a very few moments and with great precision. If it be desirable to weigh the different lobes and ganglia separately, as Prof. Meynert is in the habit of doing, the dissection may be continued as follows; otherwise the examination may be completed by making a number of cuts into the various parts perpendicularly to their surface:

A longitudinal cut through the corpus callosum separates the hemispheres from one another.

To separate the frontal lobe from the parietal, the fissure of Rolando, inasmuch as it is a constant fissure common also to most of the apes, is chosen as a guide. The operation is best performed with a single cut of a large pair of scissors.

The parietal lobe is separated from the occipital by cutting through with the scissors from the occipito-parietal fissure into the posterior branch of the fissure of Sylvius.

In separating the thalamus opticus from the corpus striatum, one blade of the scissors is placed to the inner side of the stria cornea, the other to the outer side of the tractus opticus. The cut passes though the capsula interna with little or no injury to either ganglion. The limits of the corp. quadrigem., cerebellum and pons Varolii are sufficiently evident. The medulla oblongata ends with the completion of the decussation of the pyramids.

Prof. Meynert has divided in this way, and weighed in parts, upwards of 1,000 brains, with interesting results, not yet fully made public. Among them, the disproportionate atrophy of the frontal lobes in cases of progressive paralysis of the insane, may be mentioned as having been constantly found. In one or more cases of unilateral chorea, the corpus striatum of the opposite side was found to have lost weight distinctly.

The accuracy of the results obtained in this manner is the more to be relied on, in consideration of the fact that if a loss or gain in weight affecting any given part is only apparent, it will be found compensated for by a corresponding gain or loss in the comple-

mentary part, and the observation thereby controlled. The membranes are left adherent to the lobes to which they belong.

The thickness of the cortex cerebri may be estimated by a cut, made always at the same point, and in the same direction.*—*Boston Med. and Surg. Journal.*

A Case of Traumatic Tetanus Successfully Treated with Calabar Bean. By J. A. DUNCAN, M.D., Toledo, O. (Read before the Toledo Medical Society.)

Mr. J. A., aged 17, German laborer. On June 13th, 1873, became faint (from ague) and fell with his right fore-arm against a circular saw, which nearly severed it just above the wrist. Amputation was made an inch above the injury soon after. Late in the afternoon of same day, having symptoms of ague, I gave him ordinary doses of quiniæ sulph. and iron, and they did not return. The wound seemed to do well, and on the fourth day he walked half a mile to my office to get it dressed. He continued to do so until the thirteenth day from injury; this day he complained of pain in the right ear. As his tongue was coated, and he had taken no quinine for eight days, I suspected a relapse of ague, and gave him 5 gr. doses of quinine every three hours. The pain in the ear ceased at the third dose.

At 9 A. M. the next day (fourteenth from injury), on reaching for his hat to come to my office he was seized with a spasm and fell to the floor. I arrived in fifteen minutes, and found him suffering from most intense pain in epigastrium, at base of brain, and down the entire spine. The body was bent backwards, in a state of rigid opisthotonos. Could open his jaws some, but trismus was complete in an hour.

The brows were corrugated, and the "risus sardonicus" was well marked. Respiration was so difficult, from the muscular spasms, that I thought at times he would suffocate. During the four following days so severe were the paroxysms that he would be thrown violently to one side, nor was the tonic spasm of the muscular system completely relaxed at any time.

Gave first a cathartic of podophyllin and rhubarb, and followed with enormous doses of opium, hydrate of chloral, belladonna, ether and bromide of potassium, during these four days, without apparent benefit. It was then advised to resort to the calabar bean. A tincture was obtained, containing one grain of the powdered bean to m. iv of the menstruum. Gave 14 drops at once. Retention of urine for twenty-six hours seemed to require atten-

* For this purpose a small, graduated glass tube, with sharpened edges, which has recently been described, would be of service. A piece of the cortex is simply punched out, and examined through the glass. (v. West-Riding Hospital Reports for 1873.)

tion, but I was unable to pass the catheter, on account of the spasmodic contraction at neck of bladder. Tincture of calabar bean was ordered in 9 drop doses every two hours. After the lapse of four hours I found patient almost relaxed, and that he had passed more than a quart of urine, voluntarily, about half an hour after the first dose. The pulse had fallen from 104 to 80, and there was not half the pain complained of previously.

Continued treatment. Next day found he had slept two or three hours during the night. Added quinine grs. iii, + tr. ferri chlor., m. vi., alternated with tr. of calabar bean. Sixth day (of tetanus) no better; ordered 12 drops of the latter every two hours. Seventh day, found him asleep, with pulse at 80; had now slept seven consecutive hours, and had taken no medicine for that length of time. He awoke with a spasm, and his pulse rose in one minute to 140! As the succeeding spasms were worse than on previous day, I gave 15 drops of tr. calabar bean at once; in half an hour he was better; continued the same dose every two hours. Called at 4 P. M. same day: found his eyes glaring; respiration 16, pulse 54, and free from pain, but with occasional slight twitchings of limbs.

Reduced dose to ten drops every two hours, and continued it for three days. On ninth day of tetanus he refused to take medicine from 9 P. M. to 9 A. M. next day, when I found him much worse; pulse 120, respiration 35, sleepless, with frequent and intense spasms, constantly getting more so. Gave 15 drops of calabar bean + 15 grs. of hydrate of chloral, which soon relaxed the muscles, and he fell asleep. I ordered him to be awakened every two hours, and the dose (of c. b.) repeated. This was done for the three days following, from which time he improved rapidly, the chloral being given every four hours the first day, and only at night after the third day.

Twelfth day, much better. Gave tr. of calabar bean every three hours in 8 drop doses, and continued it for the next six days, without much change for the better. Nineteenth day, gave 15 drops every three hours for the entire day, and then discontinued it altogether, as this seemed to be the *coup de grace;* for, on the following day (twentieth day of tetanus) I found my patient sitting on the edge of the bed, just finishing a gallon bowl full of beef soup and sweet milk, with bread soaked in it, and "yet he was not happy!" He wanted more of the same sort, or else some *beer*, he didn't care which. Twenty-first day, able to walk around the yard, but was very weak and emaciated. Most of the time during the attack his body was covered with profuse and clammy perspiration, which was cool on the exposed surfaces of the body. I regret to say the temperature was not noted. Some stimulants and the usual nourishing liquid food were given through a gum catheter by the mouth, it being difficult to get it between his teeth at all times.

After the calabar bean was given he had no more urinary trouble. His bowels became regular after opium was discontinued. His appetite was good, and at times ravenous; *e. g.*, the seventh day of tetanus he took three quarts of boiled milk, immediately followed with one and a half pints of strong beef tea and two ounces of sherry wine; an hour afterwards two-thirds of a quart of dried cherry soup or tea. Prior to taking calabar bean, he experienced great difficulty in swallowing, but while under its influence could do so with comparative ease. On tenth day could open jaws one-fourth of an inch; twelfth day, could protrude tongue; at close of tenth day profuse sweating ceased. The wound had healed, except a small orifice at the centre as large as a goose quill, from which a little pus could be squeezed, at the end of third week from injury. On fourth day a little erysipelatous redness appeared on the fore-arm, and spread up the arm some, but at the end of seventh day from injury this had all gone, nor did it re-appear.

At no time was there any tenderness over the median, or other nervous trunks leading from the injured parts. There was tenderness over the unhealed portion of the stump at times, apparently over the anterior inter-osseous nerve.

Lastly, the injured arm or limb was never noticed to be affected with spasm. Evidently, from this and other reported cases, we have in the calabar bean a remedy which is a powerful and safe *spinal* and *arterial* sedative, which, if properly administered and combined with other agents, will save many cases of tetanus which would otherwise die.

Cold Infusion of Green Coffee in Gout.—Dr. Monchaux communicates to *L'Abeille Medicale* his experience in the use of cold infusion of green coffee in the treatment of gout. He directs his patients to take a tablespoonful of green coffee, place it in a tumbler, half fill the latter with water at the temperature of the atmosphere, and allow it to stand for twenty-four hours. In the morning the liquid is to be swallowed, an equal quantity of water added, and taken the following morning; thus the same quantity of coffee will serve for two doses. The liquid thus obtained has little savor; it is more or less distinctly green according to the species of coffee employed. Dr. Monchaux does not explain the mode of action of the remedy upon the uric diathesis. He inclines to the belief that it acts against the effects of the disease rather than on the disease itself, and that, in order to prevent a recurrence of gout, it is only necessary to make a daily use of the remedy indicated by him. He observes that the remedy is an old one, and that, however difficult it may be to explain the precise action, the efficiency of the remedy is acknowledged. He had himself used it during three years, and with the result that his biannual attacks of gout had completely disappeared.—*The Doctor.*

Editors' Book Table.

[NOTE. — All works reviewed in the columns of the CHICAGO MEDICAL JOURNAL may be found in the extensive stock of W. B. KEEN, COOKE & Co., whose catalogue of Medical Books will be sent to any address upon request.]

BOOKS RECEIVED.

A Manual of Medical Jurisprudence. By ALFRED SWAINE TAYLOR, M.D., F.R.S., Fellow of the Royal College of Physicians, and Professor of Medical Jurisprudence and Chemistry, in Guy's Hospital. Seventh American Edition, etc., by JOHN J. REESE, M.D., Professor of Medical Jurisprudence and Toxicology in the University of Pennsylvania, etc., etc. Philadelphia: Henry C. Lea. 1873.

It is no more than strict justice to term this the most useful manual of Medical Jurisprudence within the reach of the majority of American physicians, in saying which we are only expressing verbally, what is practically apparent in the fact, that this is the seventh American edition of the work. Those of our readers who have not yet supplied themselves with this indispensable addition to the physician's library, and whose professional cares do not permit the cultivation of medical jurisprudence as a special study, but must confine themselves to a knowledge of its outlines, will find in the manual before us a most comprehensive summary of the science. The American Editor has enriched the work by the interpolation of copious notes of his own, and also of the former Editors, Dr. Hartshorne and Mr. Penrose.

Of the many portions of the work deserving attention we specially designate the second chapter, referring to the duties and responsibilities and to the unsatisfactory position of medical witnesses, which may be studied with profit by the majority of medical men who are occasionally subjected to the ordeal of the witness stand in a court, and it is certain that a thorough appreciation of the rules herein set forth would go far to enable medical witnesses to protect themselves from the imputations of unfairness so frequently cast upon them.

According to the English code, there are no "medical secrets" recognized by the law, "the law concedes no special privilege of this nature to members of the medical profession." "All ques-

tions must be answered, provided they are relevant to the case," which may be a very good law, but is certainly very poor justice, in its application sapping the very foundations of professional confidence. It is gratifying to know that in this country this disagreeable necessity has been removed by a more liberal system of jurisprudence, which declares that "no person duly authorized to practice medicine or surgery shall be allowed to disclose any information which he may have acquired in a professional character, and which information was necessary to enable him to prescribe for such patient as a physician, or to do any act for him as a surgeon." The "rules for the delivery of evidence" are excellent.

The portion of the work devoted to poisons is voluminous and comprehensive. The deduction from the celebrated Wharton case which occurred so recently in this country, is *ex parte*, and will find few endorsers amongst those most familiar with the facts.

The chapters upon the subject of rape are most appropriately terminated by the famous decision of Sancho Panza, the Governor of Barataria, which will cover most of the cases of this sort.

The subject of insanity is well treated; the section relating to the discharge of lunatics is especially commendable, and one sentence merits the earnest attention of jurists upon this side of the water. "One who has been guilty of a heinous crime like murder, should never on any pretense be discharged."

It would be of inestimable value to the cause of justice, and to the medical profession, if our law makers could be clearly impressed with the spirit of the subjoined quotation. "One source of difficulty on these occasions is, that medical witnesses are allowed to be separately sought out and summoned by those who are for and against the commission, and the opinions given by them often exactly neutralize each other. Under these circumstances they are converted into partisans in the cause as much as if they were counsel. It has been well remarked, that a man even unknown to himself, with the purest intentions and the most perfect rectitude, will insensibly lean to the side on which he has been consulted or employed. The public are apt to infer from such conflicting opinions emanating from men of equal experience, that the difference cannot depend essentially upon the medical facts of a case, and that the question might as well or even better be determined by non-professional persons. One remedy for this serious evil

would be, that medical experts on such occasions should be selected and appointed by the Lord Chancellor," etc., etc.

Pursuing the same subject (of insanity) the author refers to the apparently irreconcileable opinions of jurists and physicians regarding the legal responsibility of criminal lunatics, and insists, very justly, upon the fallacy of the knowledge of right and wrong as a test of criminal responsibility.

The "relations of medical men with insurance offices" are carefully and justly considered. This subject is now receiving special attention by some of the more prominent medical journals, and it is gratifying to perceive the unanimity of opinion and sentiment upon this subject upon both sides of the water.

It is impossible in the limited space at our command to extend our notice of this valuable manual, which reflects honor upon author, editor, and publisher. H.

Lectures on Clinical Medicine. By A. TROUSSEAU, late Professor of Clinical Medicine in the Faculty of Medicine, Paris; Physician to the Hotel Dieu, etc., etc. Translated from the third revised and enlarged edition, by SIR JNO. ROSE CORMACK, M.D., F.R.S.E., Fellow of the Royal College of Physicians of Edinburgh, etc.; and VICTOR BAZIRE, M.D., assistant Physician to the National Hospital for the Paralyzed. Complete in two volumes. Vol I. Philadelphia: Lindsay & Blakiston. 1873.

It would be entirely out of place to attempt a criticism of the work of this great master in medicine, Trousseau; we will, however, take occasion to congratulate the profession upon being placed in possession of this rich store of medical literature in a form at once complete, compact, and cheap. Until the year 1867, Trousseau was unknown except by name to the great mass of American practitioners, only a few of those familiar with his native tongue having had access to his writings. In that year the English edition of five volumes was presented to the profession on this side of the ocean, and, notwithstanding its costliness, met with a most cordial reception. The publishers of that edition have added another to the long list of obligations already due them from American medical students, in bringing the work within the reach of a larger number by reducing its price one-half, and its bulk from five volumes to two, without, however, any essential changes in the subject matter.

While we deprecate blind obedience to prescribed authority, to the exclusion of physiological analysis and logical induction, yet the young practitioner will find no safer guide, the elder no wiser counsellor, than this greatest of modern French physicians, Trousseau. H.

A Manual of Practical Hygiene, intended especially for Medical Officers of the Army and for Civil Medical Officers of Health. By EDMUND PARKES, M.D., F.R.S., etc., etc. Fourth edition. Philadelphia: Lindsay & Blakiston. 1873.

The present edition of Dr. Parkes' valuable Manual presents a marked improvement over its predecessor. Originally intended as a text book of hygiene for the use of the students of the Army Medical School, it has been subsequently amplified and made to include subjects of interest not only to practitioners in civil life, but to the laity likewise, who cannot fail to derive much valuable practical instruction from the study of its pages.

The present edition has been advantageously divided into two books. The first comprises the general hygienic relations of water, air, food and drink, soil, dwellings, disposal of sewage, exercise, clothing, etc., etc. The subjects are treated elaborately, and in a manner fully up to the times. While studying a work of this character, one cannot but be astonished at the vast distance attained by hygienic science in advance of its practical application, and feel convinced that, by far the greater portion of the diseases which afflict humanity might be obviated by an intelligent observance of hygienic rules.

The second book comprises the hygenic relations of the soldier, and of course is not so directly valuable to the medical practitioner in civil life, nevertheless there is much even in this portion of the work which is applicable to other social conditions than those for which it was especially written.

We commend the book most heartily to all needing instruction, (and who does not?) in hygiene. To the layman it will be found instructive, and to the physician, who is, *ex officio*, looked up to as instructor in all knowledge having for its object the protection and preservation of human health, and who must therefore keep up with the times, it will be found indispensable: but most of all do we urge upon municipal sanitary bodies the adoption of the work as a text book, for the instruction of officers of health, feeling

confident that much good would result from the practical application of hygienic principles to the construction of sanitary codes, which are now in too many instances based upon the crude notions of sciolists and petty politicians.

It is only by means of municipal interposition that communities can be educated in hygiene. Individual instruction by physicians, it is true, will accomplish something, but that amount, even, of instruction cannot be given by those who are themselves uneducated. H.

Chemistry, Inorganic and Organic, with Experiments. By CHARLES LOUDON BLOXAM, Professor of Chemistry in King's College, London, etc., etc., etc. From the second and revised English edition. Philadelphia: Henry C. Lea. 1873.

One of the best text books of chemistry yet published, comprising, in three divisions, the chemistry of non-metallic elements and their compounds, the chemistry of metals and metallic compounds, and organic chemistry.

The author has adopted in this edition the atomic system of notation, which of course necessitated the re-arrangement of portions of the work, which, while it may somewhat disturb the accepted ideas of elementary relations, cannot fail ultimately to conduce to certainty in method of study and to accuracy of results.

The study of organic chemistry is too much neglected by medical men, and the ignorance resulting therefrom retards materially our progress in physiological investigation with which chemistry should go hand in hand. The author has devoted a few pages to the consideration of the application of chemical principles to certain of the arts.

The work is well and freely illustrated, and as a whole cannot fail to prove one of the valuable text books in the science, and not less so as a work of reference which should find a place upon every physician's study table. H.

Report of the Columbia Hospital for Women, and Lying-in Asylum, Washington, D. C. By J. HARRY THOMPSON, A.M., M.D., Surgeon-in-Chief. With an Appendix. Washington: Government Printing Office. 1873.

In February, 1866, the Columbia Hospital for Women was opened under the auspices of the United States Government in

the city of Washington, in anticipation of a charter which was granted by Congress on the following first of June. The Report before us is a *resume* of the operations of the institution from its commencement to the end of June, 1872. It was prepared by the Surgeon-in-Chief, Dr. J. Harry Thompson, who, notwithstanding the brief period of time allotted to the work (about six months) has managed, with the aid of the assistant surgeons in charge of the dispensary attached to the hospital, to present us with a book of four hundred and thirty quarto pages.

The number of surgical operations performed in the hospital during the time embraced by the Report was about seven hundred, of which only four resulted fatally, and, adds Dr. Thompson, "During the last four years, not one single case of death has occurred as the result of surgical interference, although within that time a large number of very important operations have been performed, all of which have been successful."

We venture the assertion that such a remarkable degree of success as this statement indicates is wholly unprecedented in hospital practice.

From the summarized report we learn that there have been admitted to the hospital 11,455 patients, of whom 9,457 were cured, 1,081 relieved, 81 died, 257 were incurable, 7 were sent to Insane Asylum; in 442 the result of treatment was unknown, and 150 were still under treatment June 30, 1872.

The Report commences with the details of thirty-four operations for the radical cure of ruptured perineum, all of which were successful.

The operation for this accident as performed by Dr. Thompson does not differ in any important particular from that usually adopted by surgeons of the present day. It is essentially the same as that introduced by Dr. Baker Brown, differing from this latter, however, in that our author objects to the division of the sphincter ani except in special cases, preferring to rupture some of its muscular fibres by forcible dilatation, in the manner recommended and practiced by Professor Van Buren, of New York. He likewise prefers silver wire to the waxed thread both for the deep and superficial sutures; and instead of encouraging a constipated condition of the bowels after the operation, he endeavors to secure their daily evacuation.

Next follow the reports of two interesting cases of vesico-vaginal fistula, and in the chapter on this subject our author commits the blunder of introducing eight pages of unnecessary matter in the shape of an extract from Dr. Sims' address to the New York Academy of Medicine—a very excellent thing in its place, but very much out of place, we think, in this report. And inasmuch as we have very little fault to find either with our author or his book—this latter being for the most part excellent—it will be as well, perhaps, that we should put all our fault-finding in this one place. The introduction of the lengthy extract just alluded to is but one evidence of what seems to have been a governing principle with Dr. Thompson, namely, to make a very large book from very little material. Other examples of this disposition to fill up space are the introduction of Tyler Smith's description of the minute anatomy of the os and cervix uteri, which, with the wood-cuts accompanying it, occupies nineteen pages; Morgagne's cases of foreign bodies in the bladder, thirteen and a half pages, and various authors on cancer, sixteen pages. The wood engravings—most of which, by the way, are wretched specimens of the art—are made to occupy much more space than necessary; and when we consider that in addition to all this expansion nearly two-thirds of each page is blank margin, itwill be readily understood that the kernel of this book might have been placed in a much smaller shell.

The remaining chapters of the book are devoted to the following subjects: Vaginal Cystocele and Rectocele; Diseases and Displacements of the Uterus; Uterine Tumors; Carcinoma Uteri; Diseases of the Vagina and Cervix Uteri; Chronic Cervical Metritis and Endometritis; Foreign Bodies in the Bladder; Extirpation of the Parotid Gland; Pelvic Cellulitis; Diseases of the Rectum. Details of cases under each head, the kind of operation employed, and the result of treatment, are fully given.

The Appendix consists of reports from the surgeons and physicians in charge of the different departments of the hospital dispensary, as follows: Diseases of Women, by Dr. F. A. Ashford; Diseases of Children, by Dr. Samuel C. Busey; Diseases of the Eye and Ear, by Dr. D. Webster Prentiss. These reports each contain much valuable matter, although their usefulness is somewhat marred, like that of the main report, by the too frequent evidences of hasty preparation.

A. R. J.

A Treatise on the Pneumatic Aspiration of Morbid Fluids: a Medico-Chirurgical Method of Diagnosis and Treatment of Cysts and Abscesses of the Liver, Strangulated Hernia, Retention of Urine, Pericarditis, Pleurisy, Hydrarthrosis, etc. By Georges Dieulafoy, Gold Medallist of the Hospitals of Paris. Philadelphia: J. B. Lippincott & Co. 1873.

A complete summary of the ideas which have occupied the medical mind concerning the injurious influence of fluid accumulations in closed cavities and organs of the body, the advantage to be derived from their removal, and the various appliances which have from time to time been adapted to the accomplishment of that object.

Whilst the disastrous effects of the accumulation of morbid fluids in cavities and organs have been recognized and appreciated from a very early period of the history of medicine, as is manifest from the numerous attempts which have been made to effect their removal, the true principle upon which such attempts must necessarily rest for their success has, it seems, eluded the perception of all experimenters, until the presentation of the essay of Dr. Dieulafoy to the French Academy of Medicine in 1867.

This true principle of pneumatic aspiration, as laid down by Dr. Dieulafoy, "is invariable; it consists in the fineness of the needle, and the creation of a previous vacuum;" in other words, upon the exclusion of air and the prevention of the escape of the fluids interstitially. The author's experiments have directed him to the following conclusion: "*It is always possible, owing to aspiration, to search for a fluid collection, without any danger, whatever may be its seat or nature.*" A proposition so bold and radical demands for its substantiation the most abundant and convincing evidence, inasmuch as its establishment must revolutionize many of our notions which time and prescript have rendered almost axiomatic. It is but just to the author, however, to admit that his numerous carefully conducted and conclusive experiments have supplied all the evidence which the most incredulous could demand, and mark the introduction of pneumatic aspiration as the beginning of a new era in rational medicine—constituting a new triumph of logical induction from observed phenomena to a scientific principle, entitled to take rank with vaccination and auscultation. H.

Lectures on Madness, in its Medical, Legal and Social Aspects. By Edgar Sheppard, M.D., Member of the Royal College of Physicians, Professor of Psychological Medicine in King's College, London, and one of the Medical Superintendents of the Middlesex County Lunatic Asylum at Colney Hatch. Philadelphia: Lindsay & Blakiston. 1873.

The Council of King's College probably never demonstrated "their wisdom" more clearly than when "honoring an old student" with the appointment to the chair of Psychological Medicine in the institution under their charge. We have but one objection to the book, its brevity. What Dr. Sheppard has told us about insanity is so well told, so clear, so concise, so practical, that we close the book with regret that he has not gone more fully into detail and elaborated its various subjects more minutely; and yet that would have impaired the usefulness of the lectures for their destined end, *i. e.*, the instruction of students in the elements of psychological medicine; and for this end we know no work in the English language so well adapted. Dr. Sheppard gives in these lectures his own conclusion regarding insanity, which although by no means dogmatical, are independent, and, as far as we are able to judge, logical. This little book, while intended for the instruction of medical students, would conduce greatly to the enlightenment of lawyers and judges, and tend to remove from their minds the influence of certain legal hypotheses regarding insanity, which, based upon false physiology, have served as foundations for prejudice and injustice. When these begin to study madness from a physiological rather than from a metaphysical standpoint, then will we begin to correctly estimate its social and legal relations, and definitely to fix the status of its victims. H.

Insanity and its Relations to Crime. A Text and a Commentary. By Wm. A. Hammond, M.D., Professor of Diseases of the Mind and Nervous System, and of Clinical Medicine in the Bellevue Hospital Medical College, etc., etc., etc.

Upon the vexed question, which the title to the book before us involves, law and medicine seem to be arrayed on opposite sides; the first claiming as its victims all who transgress its edicts, no matter what their mental condition, provided "they can distinguish right from wrong;" the second claiming as its patients

those whose transgressions are involuntary. The reader of Dr. Hammond's "Text and Commentary," will entertain a reasonable doubt whether the author may not have "gone over to the other side," and assumed the role of counsel for the prosecution, endeavoring to secure the (almost) indiscriminate punishment of those whose protection he should be most desirous to secure. We should, however, be sorry to believe that the majority of the legal profession endorse some of the propositions advanced by the author, in which he appears to separate the rights of society from those of the individual, and to establish an antagonism between them which appears to be totally illogical. The proposition that "society has no more business with abstract justice than it has with any other bit of philosophy," savors too strongly of Communism.

We cannot but think that in his zeal for the protection of society and the punishment of crime, the author disregards too blindly the protection of individuals, the social units, without which society would not exist.

The consequences which might be logically deduced by extension of the parallel cited below, would be to reduce society to a condition horrible to contemplate. "Even if actual cerebral disease be the cause of the irresistible impulse, it does not materially detract from the right of society to protect itself against injury from those in whom it exists." To this there can be no objection, but mark the mode which is suggested in the context, viz.: "A dog afflicted with hydrophobia going about snapping at those who come in its way, is destroyed in order that it may not bite us, and may not poison other dogs, who, in their turn, may bite us. The dog is suffering from a disease of its brain which gives it an irresistible impulse to bite. We kill it without the slightest hesitation." We would be almost equally justifiable in killing the insane with irresistible impulses to commit homicide, if we did not possess places in which to confine them safely. An extension of such reasoning would justify the killing of a small-pox patient in order to protect ourselves from the probable fatal consequences of contagion.

If the fallacy of such reasoning needed demonstration it would be found in the spirit of Christian philanthropy of the peasants of Gheel, in Belgium, where every cottage is a lunatic asylum and every peasant a keeper. H.

Pharmaceutical Lexicon: a Dictionary of Pharmaceutical Science. Containing a Concise Explanation of the Varied Subjects and Terms of Pharmacy, with Appropriate Selections from the Collateral Sciences, etc., etc. By H. V. SWERINGEN, Member of the American Pharmaceutical Association, etc. Philadelphia: Lindsay & Blakiston. 1873.

Inasmuch as the author of the above work, in his preface, deprecates criticism, we forbear to say much that might be said of the injurious influence of compendiums in general, upon the progress of scientific study.

Such a work as this, while doubtless written in good faith, to subserve the purpose of a work of reference for the busy pharmacist or physician, is liable to the abuse of encouraging idleness and ignorance, by giving to the pretender and sciolist a "ready method" of seeming to possess knowledge only to be truly acquired by long years of patient study and investigation.

We must protest against the author's philological theories advanced in the preface and practically applied throughout the book. Words, independent of their derivations, are arbitrary symbols, empty sounds, whose use simply hastens the process of phonetic corruption which all languages seem doomed to sustain, and from which it should be the duty of every scholar to protect them.

The Pharmaceutical Lexicon certainly contains a good deal of useful information, and thus far we commend it cheerfully to those who need a manual of quick and easy reference for popular use. H.

Contributions to Practical Surgery. By GEORGE W. NORRIS, M.D., late Surgeon to the Pennsylvania Hospital; Vice-President of the College of Physicians of Philadelphia, etc., etc. Philadelphia: Lindsay & Blakiston. 1873.

The above is a republication in book form of the author's essays which have already appeared from time to time in the *American Journal of Medical Sciences*, and present his views and opinions upon the various points in practical surgery which they comprehend. The opinions of Dr. Norris are entitled to respect, not only from his well-earned reputation as a surgeon, and his long experience and ample opportunities for observation and experiment, but also from the mass of evidence brought to sustain them in the shape of statistics carefully tabulated and apparently honestly compiled.

That the statistics do not include operations of very recent date, is to be regretted, as they might thus escape the suspicion of unfairness, to which most statistical arguments are susceptible. They will, however, be very acceptable to a numerous class of practitioners dependent upon the opinions of standard authorities, and not having sufficient data within their own experience to justify the formation of individual conclusion. The whole book bears the impress of the patient and laborious study, the accurate analysis, and the conscientious criticism of a skillful surgeon, and an accomplished scholar. These "Contributions to Practical Surgery" will be welcomed by the profession and accepted as actual additions to the stock of human knowledge. H.

Editorial.

Are Lunatics Criminals?

The subject of the legal status of criminal lunatics has absorbed the attention of the medical and legal professions and of the public so deeply of late, that there is some danger of confounding the greater with the lesser category, and regarding all who may be so unfortunate as to have lost their wits as criminals.

Whether this danger exist theoretically may or may not be true, but certainly the practical effects of such a theory are already apparent in this city; and while the sufferer from small-pox or a broken leg is tenderly conveyed to befitting hospital accommodation provided for his reception by the county commissioners, the still more unfortunate sufferer from disease of the brain is dragged like a felon to the nearest police station or to the county jail, to share the cells of vagabonds and convicts. It would be well if some of our philanthropists (and there are many true ones in our midst) could visit occasionally the County Court of Cook county upon a day when the victims of brain disease are brought before it for examination. They would then see, perhaps, some respected citizen, some valued friend, some beloved relative, even, who had been decided to be insane, sent, by order of the court, to the jail below. The learned and humane judge who presides over

this court deplores most deeply the necessity which compels him, having due regard to the protection of society, to order the incarceration of these unfortunate beings in the only place at his disposal for the purpose.

This state of affairs is a crying evil, demanding the prompt attention of the county commissioners, to whose notice the subject has been brought repeatedly and urgently, but thus far without avail. Will they wait until one of their own number shall be reduced to this fearful condition, and, becoming too violent to be controlled by his family, be locked up in the filthy cells of this abode of horrors, to become the jest of malefactors, and the prey of vermin?

Within a few days a young gentleman, for many years a resident of the North Side, and a member of a well-known commercial firm, had an attack of epileptic mania, during which he became so violent as to endanger the safety of his young wife and infant child. In default of other asylum he was consigned to a cell of the nearest police station house, and, after examination before the County Court, to the county jail, until arrangements could be made for placing him in the asylum for the insane. Could the county commissioners have seen the grief of that broken-hearted young wife and mother, on parting from her husband at the threshold of his prison, their hearts, perhaps, would have been awakened to the necessity of providing a temporary asylum for such cases.

We have seen, in a cell of a police station house in this city, the wife of a respectable citizen, who by reason of her insanity could not be properly cared for at home, in a perfectly nude condition, exposed to the gaze of any policeman or curious idler who might choose to peer through the grating of her cell-door, the apartment itself being too filthy to justify its use even by an animal.

Our county commissioners have at last provided a receptacle for the unrecognized dead, the "Morgue," and we hope will some day provide for living sufferers from all disease whether of body or mind; until they do this, an essential part of their functions remains undischarged.

It is to be hoped that the people, through the secular press, their mouth-piece, will clamor without cessation until this urgent need is supplied. H.

Loot.

Normal Ovariotomy.

The new operation of normal ovariotomy is engaging the thought and comment of the profession so generally at the present time as to make everything bearing upon the subject of interest to our readers.

It affords us pleasure to be able to put upon record some additional facts, derived from a second case operated upon by Prof. J. T. Gilmore, of Mobile, Alabama, and kindly furnished us in the subjoined letter from that skilled surgeon:

MOBILE, ALA., June 15, 1873.

Dear Doctor—Your letter relative to a case of normal ovariotomy was received some days ago.

The case I operated upon was unlike yours, in having an atrophied uterus of many years duration. Whilst the menstrual irritation had, since the menopause, been productive of great discomfort, it was only within the six months immediately preceding the operation that it had threatened life by the violent congestions of the brain which were recurring regularly every two weeks at the period of the operation, at which time she had become almost idiotic.

She was in bad plight for any operative procedure at the time it was done, and yet, so threatening were the paroxysms, it was feared that another one would destroy her life.

Drs. Ketchum and Gaines had attended her for years and had resorted to every resource in the effort to re-establish the menstrual flow, but without avail, and they both assented to the proposition that if normal ovariotomy was a legitimate operation under any circumstances, the case in question justly claimed its benefits. Dr. Ketchum assented to the operation. Dr. Gaines hesitated, but his objection presented no real basis upon which to ground an opposition. Drs. W. H. Anderson, Ketchum and Gaines discussed the probable physiological effect of a removal of the ovaries, and all agreed that without some such intervention the patient would certainly not get through with many more such attacks as she had recently endured.

Dr. Anderson, who fills the Chair of Physiology in our medical college, urged the operation upon physiological grounds. The absence of the uterus rendered it improbable that there could ever be any more menstrual elimination, and the purpose of the operation would be to destroy, as far as possible, the menstrual irritation, by putting a stop to ovulation.

The operation was performed in December last.

The peritonitis that was lighted up, and the cellulitis which followed, ended in abscess, which is still discharging through the

abdominal wall, at the point of incision. The patient barely escaped with her life.

Her brain is now relieved. Every two weeks she has still some hysterical symptoms, *i. e.*, choking sensations, with the feeling as though there were some foreign body in the throat. There has been no menstrual show whatever. There is still discharging from the abdominal fistula about an ounce and a half of thin pus daily, and the cavity of the abscess I wash out every third or fourth day with carbolized water, through a catheter and syringe. The abdominal discharge is lessening daily, and there are noticeable changes in her features and mammary glands.

I shall await the full results of the case before publishing it in detail. This is an important subject you have opened up to the profession, and deserves a most honest and careful detail of cases operated. Yours truly, J. T. GILMORE.

We hope, at a proper time in the future, to be able to lay before our readers the full particulars of this case, the operation and its results, both physiological and curative.—*Atlanta Med. and Surg. Jour.*

Fracture of the Clavicle Treated by Placing the Arm behind the Back.

A patient was recently under M. Broca's care who had fractured, by a fall, his left clavicle, near the middle of the bone. The fracture was oblique, from above downwards and from without inwards, the fragments riding over one another to a considerable extent. Various plans of treatment were tried, but without effecting permanent reduction into a good position. At length, calling to mind a communication made last year by Dr. Michel, to the Societe de Chirurgie, M. Broca placed the limb in a semi-flexed position behind the back, when the most perfect confluence of the fragments occurred. The arm was fixed in this position by a bandage, and kept in it for eighteen days. At the expiration of this time the bandage was removed and the arm set at liberty. When it was found that the parts were sufficiently consolidated to prevent any likelihood of displacement, the limb was brought forward and kept immovable in a sling for a few days longer. This method of treatment has been regarded as excessively painful, but in this instance the patient only complained of the inconvenience and pain for the first twenty-four hours. At the same time it must be stated that he was a man of considerable nerve. Immediately after his entrance into the hospital, he several times raised his hand to his head, giving a fresh demonstration of the possibility of movement with a fractured clavicle. The result was so good, says M. Broca, that had the patient been a lady, she might have worn a low dress without any disfigurement being observable. The proceeding of placing the hand behind the back in the treatment of fractured clavicle is not quite new, for M. Grout is cited by M. Malgaigne

as having adopted it. M. Broca does not think this plan applicable to all cases, since it compels the patient to sleep on the opposite side; but he agrees with Malgaigne in believing that in some fractures of the clavicle, the broken ends of the bone can only be brought into apposition by placing the upper extremity in special and peculiar positions, which may be quite different in different instances.—*Journal de Medicine*, Tome xliv, 5eme Cahier.—*The Clinic.*

American Public Health Association.

NEW YORK, September 2, 1873.

The Executive Committee of the American Public Health Association have resolved to change the time and place of the adjourned annual meeting, as designated at Cincinnati.

Instead of the meeting proposed to be held at Providence, R. I., in September, it is deemed expedient to designate the city of New York as the place, and Tuesday, the 11th of November, as the time, for the next general meeting of the Association. It is believed that this appointment will best suit the preferences of all members and friends of the Association that can attend the Autumn Meeting. These changes are rendered necessary by the pressure of official and professional duties at this season.

Please communicate to the Secretary at your earliest convenience, such information as you can give respecting papers or reports which will be prepared for that meeting, in order to enable the Executive Committee to issue in advance the synopsis of papers and topics for discussion at the meeting, as required by the Constitution.*

The opening session will begin on Tuesday forenoon of November 11th, and it is expected that important reports and discussions will occupy the attention of the Association for three or four days.

By order of the Executive Committee.

Executive Committee.—Stephen Smith, M.D., President; Edwin M. Snow, M.D., 1st Vice-President; John H. Rauch, M.D., Treasurer; Moreau Morris, M.D.; Henry Hartshorne, M.D.; Francis Bacon, M.D.; William Clendenin, M.D.; C. C. Cox, M.D.; John M. Woodworth, M.D.; Elisha Harris, M.D., Secretary, 301 Mott Street, New York.

* All Committees, and all members preparing scientific reports or papers to be laid before the Association, at its annual meetings, must give, in writing, the title and outline of such reports or papers to the Executive Committee, at least six weeks preceding the date of such meeting, to secure their announcement in the order of business.

Notice.

A Clinic for the Treatment of Diseases of the Brain and Nervous System, will be held at Rush Medical College on every Saturday afternoon throughout the year, by Dr. W. Hay, Adjunct Professor of Theory and Practice.

THE

Chicago Medical Journal.

A MONTHLY RECORD OF

Medicine, Surgery and the Collateral Sciences.

EDITED BY J. ADAMS ALLEN, M.D., LL.D.; AND WALTER HAY, M.D.

VOL. XXX. — DECEMBER, 1873. — NO. 12.

Original Communications.

ARTICLE I.—*Lanfranc of Milan. His Brief. Reduced to our Vulgar Phrase.* By JAMES NEVINS HYDE, M.D., Chicago.

The little volume before me is entitled: "A most Excellent and Learned Woorke of Chirurgerie, called, *Chirurgia Parva Lanfranci.* Lanfranke of Mylayne, his briefe, reduced from dyvers translations to our vulgar or usuall frase, and now first published in the Englyshe prynte by John Halle, Chirurgien. Who hath thereunto necessarily annexed A Table, as wel of the names of diseases and simples with their vertues, as also of all other termes of the arte opened. Very profitable for the better understanding of the same, or other like workes. And in the ende a compendious worke of Anatomie, more utile and profitable then any here tofore in the Englyshe tongue published. An Historiall Expostulation also, against the beastly abusers both of Chyrurgerie and Phisicke in our tyme. With a goodly doctrine and instruction, necessary to be marked and folowed of all true Chirurgiens. All these faithfully gathered and diligently set forth by the sayde John

Halle. Imprinted at London in Flete streate nyghe unto saint Dunstone's churche by Thomas Marshe, An. 1565."*

It is difficult to scan the distinct Black-Letter, impressed three hundred years ago upon these yellow pages, without feeling an interest in the man whose thoughts are thus conveyed to us across the arch of time. Who was he? Under what circumstances did he practice that profession, whose stores of learning have been garnered and transmitted for the use and profit of to-day?

". . . . Si quæris vultum dignoscere verum
Hos lege. Hii vere explicuere animum ;"

Reads the text beneath the engraving that represents to us his features.† This latter is crude enough. But he will not wonder overmuch, who reflects that it was completed only ninety-four years after the first book printed in England, issued from the first English press; and that forty years elapsed subsequently before the formation of a school of English engravers. The frontispiece shows us an honest, square, full-bearded, Saxon face, beneath a skull cap and hat not unlike that now worn by the warders of the Tower of London. The broad high collar and facings of the coat are apparently of taffeta. In the left hand is held one of the simples referred to in the title-page.

There is nothing in the portrait which would preclude the idea that the author of the work possessed also such physical gifts as are described in his preface as "the properties of a chirurgien: He shoulde bee of cleare and perfecte sighte, well formed in person, hole of minde and of members, sclender and tender-fingred, having a softe and stedfast hande, or, as the common sentence is, a chirurgien shoulde have three dyvers properties in hys person, that is to saie, a harte as the harte of a lyon, his eies like the eies of an hawke, and his handes as the handes of a woman." Were these the "properties" of all the surgeons of the 19th century, their fame and features might be preserved for as many hundred years as those of Maister John Hall.

* This rare and curious specimen of the medical literature of the 16th century is the property of Dr. Charles Gilman Smith, of this city, and was recently procured by him of an antiquary in London.

† This engraving has been several times copied as an interesting evidence of the infancy of the art at that period. It is very accurately reproduced in Sargent's Collection.

The England in which our author "diligently set forth his compendious worke," was far different from the England of this decade. That England awaited the dawning of a light that was to enliven science, literature, art and religion with its vivid beams. But the year 1565 knew only of the darkness that precedes the dawn, although a few struggling rays had already brightened its horizon. The glory of the reign of Elizabeth had yet to be declared. The eyes of the baby, William Shakspeare, looked out wonderingly upon the placid waters of the Avon. Protestantism and Catholocism were alike intolerant and aggressive. Ten years before, Hugh Latimer had walked to the stake with Coverdale's bible clasped to his girdle. The author of the Faerie Queene was a student twelve years of age. In Italy, Galileo had but just signed his renunciation of the Copernican theory. French was the language of the English court and nobility. English was indeed, as our author terms it, "the vulgar or usuall frase," and was read or written by few of those who spoke it. Surgeons were still licensed to practice by the Bishops of the Established Church — a fact indirectly confirmed by the text before us:

" . . if none but the learned and experte myght have wrought and they also admitted by the byshop: as it hath in tymes past been holsomlye ordeyned in this Realme."

This responsibility was, however, imposed soon after this date upon the College of Physicians of London, which was founded by Thomas Linacre, of Canterbury, physician to Henry the VIII, the Queen's father. Linacre was himself also an author, and published the first work in the Latin language which was issued from an English press. He also established a chair of Hippocratic and Galenical medicine in the Universities of Oxford and Cambridge.

It is evident that some organization of the regular practitioners of surgery, in London and its vicinity, had been at this time effected.* The "Epistle Dedicatorie," of the volume before us, is "Unto the Worshipful, the maisters, wardens, and consequently to all the whole company and brotherhod of Chirurgiens of London," wherein they are bidden to "bee thankefull to maister William

* The Company of Barbers of London, and the Company of Surgeons of London, were united in the year 1540, under the title of the "Masters and Governors of the Mystery and Commonalty of the Barbers and Surgeons of London." The Company of Surgeons of London dates from the year 1511.

Cunningham,* doctor of phisicke, for his so many learned lectures which be red in our halle." Doctor Recorde had, it appears, dedicated his "Urinale of Phisicke" to the same body; and Doctor Turner† had "compyled his englyshe herbale for their sakes."

The maister Cunningham alluded to, is the author of a letter which succeeds the dedicatory epistle, commending highly "unto the professors of Chirurgerie in London, the labours of John Halle, one of theyr fellowshippe," and in which he expresses a doubt "whether Lanfranke oweth more to him [Hall] for the restoring of his decayed worke, or he to Lanfranke for the immortall fame hereby obteined." This is followed by a letter from Thomas Gale,‡ "maister in Chirurgerie, to his well beloved friende Halle," written evidently with a view to further the adventurous scheme of publication. Its encomium upon the art of surgery is forcibly expressed: "for, without it, pleasures were but painful, riches unprofitable, company annoyance, strengthe febelnes, bewtie lothsumnes, senses dispersed, and finally all things in the worlde unpleasant."

We have, then, internal evidence of the fact that Hall was not only highly esteemed by eminent contemporary authors, who were his friends, but was himself also a surgeon of repute. He was born in 1529, and, at the age of thirty-five years, was engaged in the practice of his profession in Maidstone, Kent. Bishop Tanner states that he wrote and translated several other surgical treatises. We learn also, from the same source, that he subsequently composed a volume of hymns. Cunningham tells us that "he hath also framed an other worke, inveying against vice, and therefore named the *Court of Vertue*, being now in the printer's handes."

* Cunningham (or Cunyngham) was, at the age of twenty-eight years, a physician of Norwich; and there is an extant engraving, representing him with Dioscorides' book of plants in his hand. He was the author of several works. One is entitled the "Cosmographical Glasse, conteyning the pleasant principles of Cosmographie, Geographie and Hydrographie or Navigation." Another treatise has for its subject the French Disease, or Syphilis of our nomenclature. Still another is a commentary on the works of Hippocrates.

† Dr. Turner's Herbal, here noticed, was published in 1551, as a Black-Letter folio, and is the oldest Herbal in the English language.

‡ Thomas Gale, or, as he sometimes wrote his name, Galus, was one of the surgeons of Queen Elizabeth. One of his works is dated in the year 1563.

His efforts in verse, which are scattered along these pages, though exceedingly puerile when criticized in the purview of modern poetry, yet compare favorably with the stanzas of the Battle of Chevy Chase, which was the popular ballad of his time. His medical library could hardly have contained many volumes beside the published productions of his friends, already enumerated, with perhaps "Bulleyn's Bulwarke of Defence against all sicknes, sorenes and woundes that doe daily assault mankinde," published in 1562; and possibly also a few Latin and Greek commentaries on the medical teachings of the classic and Arabian schools.

In the introduction to the treatise of Lanfranc, he states that the whole art of medicine is contained in three principal parts: Physiology, (which is made to include Anatomy), Pathology, and Therapeutics. The latter, or curative, part is described as having three instruments: Dietetics, Pharmacy, and Surgery. After remonstrating against the tendency, then prevailing, to a complete separation of these branches of medicine, he concludes by detailing the reasons which led him to reproduce in English the work of the Italian master.

Lanfranc was born in Milan, but was compelled to leave his native city in consequence of some political difficulties. He went to Paris in the year 1295, where he was known as a "medecin chirurgique"—a term then applied to doctors in medicine who practiced surgery.* He soon became the first of a long line of brilliant surgeons who have illustrated the genius and skill of the French in scientific pursuits. Pupil of Guillaume de Salicet of Placentia, he had readily surpassed his preceptor in the boldness and success of his undertakings. His work entitled Grande Chirurgerie, was the most authorative compilation of surgical science up to the conclusion of the 14th century, and we are not surprised to learn that the English surgeons of the 16th century studied and translated his writings with the reverence of scholars for the treasures of antiquity. With them, antiquity was equivalent to authority.

The treatise selected for publication by Hall, is the "Chirurgia Parva," or minor work. We are informed that it was originally composed in the form of a letter to a friend, as a prelude to a greater work subsequently published in 1296. This greater work is, without doubt, the "Grande Chirurgerie." The letter,

* Dunglison's Hist. of Med. Phil., '72.

or brief, is addressed by Lanfranc to his "faithfull frende and disciple Bernard," and was probably written, as the Italian and French titles seem to indicate, before his resort to Paris.

The limits of an article in the JOURNAL, preclude the possibility of making extended extracts from these quaint dissertations. Forty-eight pages only are allotted to the text proper, and twenty-four to the annexed "Antidotarie." The subject of fractures is exhausted in twenty-seven lines; that of dislocations occupies merely one page and a half. A portion of the seventh chapter, entitled, "Of the Wounde of the Heade with breakinge of Cranion," is interesting as an indirect confirmation of the idea that there is nothing new under the sun, and that the practice of auscultation and percussion was recommended five hundred years before the birth of Laennec:

"When the wounde is made in the heade with breakinge of the sculle, consider whether it be broken unto the inwarde partes or no, that is to saye, to *duram matrem*, whiche thou maiste knowe by divers meanes and waies, partelye by perseverance and partelye by infallible experimentes.* The signes be these: the feelinge of greate paine, vomiting, teares of the eies, crokednesse of the syghte, inflammation or rowlinge of the eies. And the experimentes are these: take a stronge threde, double twisted and wexe it, and let the patiente holde it stronglye in his tethe, and begin thou at the mouthe of him, and with thy nailes stretche and streigne oute the threde, til thou come at the other ende of the same, holding it streight a cubite lengthe from the tethe, and make a sounde upon the threde with thy nayle, and doe so often times. If the patiente may susteine the sounde without feelynge of peine, then is not the sculle broken to the *dura mater*, for, if it be broken, he maye in no wise susteine nor suffer the harping of the nayles upon the threde. Or else thou mayst also take and smyte his head with a smalle dry wand of wylowe, or of y^e^ pine tre, and *holde thine eare* to hys head. And if the sculle be whole, it wyle make an hole sound: but if it be cutte or broken, it will make a dumme noyse, after the comparison of a broken bell and a whole."

* These pages supply abundant evidence of the fact that the English language was at this time in its formative stage. The old black letters, or Gothic type, were originally *fac similes* of the characters found in manuscript. The various spelling of the same words in one paragraph, probably occurred in, and was copied from, Hall's chirography.

The treatment advised is, the enlargement of the wound, if the fractured surface be more extensive than the external lesion, and the removal of any loose pieces of bone, which may be encountered. If depression of the bone has occurred, the measures to be pursued are by no means heroic. Warm oil of roses—an application to wounds evidently much esteemed by the author—is to be infused, and small pledgets of tow or lint superimposed, soaked in the same preparation with the yolk of an egg added, hot. On the second or third day thereafter, an effort is to be made "by most tender and delycate workinge wyth convenient instrumentes," [not otherwise described],* to remove, not elevate, the depressed portion. The membranes were to be carefully avoided, and the operator is to have in mind "the lytell shiver that greueth the *dura mater*."

The external wound was to be kept open till the fracture was healed, by the aid of lint or tow, saturated with the lotion described, and over the whole were to be "bounde greate boulsters or pressures of towe, wete in the somer time in colde water, and in the winter in whotte water."

The second part of the work treats of "Apostemes." Hall declares that "this word signifyeth the same whyche the Latines caule *abscessum*." There are chapters on watery apostems, and windy apostems, apostems of natural and unnatural humors, hot, cold and compound apostems. It is a convenient word. Under it are discussed disorders of the most diverse etiology, including icterus, cutaneous diseases, carbuncles, and quotidian fevers. In the appended "Antidotarie" we find many familiar names of medicaments, interspersed with others that are strange and disgusting. Of the former class are, manna, scammony, aloes, lactucarium, opium, hyosciamus, cardamom seeds, cubebs, anise, chamomile, yeast, flaxseed, and the axangia porci.

It must be confessed that the anatomical compend by Hall, which succeeds the translated portion of his work, scarcely betrays the shadow on the dial plate of the three hundred years that divide them. It furnishes abundant proof that dissections of the human body were as yet neither permitted nor practiced in England. Mondini de Luzzi, in the year 1315,† dissected the human

* The trephine was first employed by Fabricius ab Acqua pendente at the close of the 16th century.

† Renouard, Hist. of Med.

cadaver in Bologna for the first time for seventeen centuries, and the acquisitions obtained through his anatomical studies, sufficed the world for nearly two centuries longer. It is exceedingly doubtful whether Hall and his associates, who quote for their authorities Galen and Hippocrates, were informed regarding Mondini's investigations. The international communication of their period, was had in the interest of sovereigns and their servants, rather than of savants. From his silence on that subject, we may, for example, conclude that Hall knew nothing of the labors of Ambrose Pare in Paris, who yet at this very time, published an account of the pathology and treatment of gunshot wounds produced by arquebuses—a species of injury then novel to the surgeon and the soldier.

Four anatomical plates only are appended, and these represent exclusively the external surfaces of the body. The explanations of the cuts are connected by lines with the parts named, but nowhere is the site of viscera or muscles indicated. There is one feeble attempt to outline the bones. The student is referred merely to the nares, the venter, the genæ, the pectus, etc. The plates themselves are so rude that they bear a curiously suggestive resemblance to those which illustrate a Chinese medical work in the library of the writer of these pages. For comparative excellence the palm should certainly be awarded to the edition of the Celestials.*

It must not be forgotten that the circulation of the blood was not discovered by Harvey till fifty-seven years after the date of Hall's publication ; and that the latter still believed in the existence of the four animal humors : blood, phlegm, choler, and melancholy. His practice was based chiefly upon the four temperaments which were considered to result from these humors, viz. : the sanguine, the phlegmatic, the choleric, and the melancholic.

The chapter, " Of the hearte," is subjoined in full, as a sample of his other anatomical descriptions :

" And wythin those bones, that is to saye, the bones of the brest, the rybbes and the spondilles of the same, wythin the holownesse that is made of them, I saye, is the Hearte, named in Greeke,

* This volume was procured in Shanghae, by Dr. C. D. Maxwell, U. S. N. The plates are probably reproduced from some old compend of medicine in the Portuguese language.

cardia, and in Latyne, *cor*, confyrmed and sette. Whyche, because he is the principall member of all other members, and the beginning of life, is thus sette in the myddest of the breaste, as lorde and Kinge to all the rest: of whome he is obeyed and served, as a prince of hys subjectes. And the hearte hath bloude in hys owne substance, wheras all other members have it but in arteries and veines: and in the hearte is the nutrityve bloude made livelye spirite, and carried forth in the arteries, whiche in the hearte have theyr beginnynge. And the hearte is covered with a strong pannicle, called of the Latines, *capsula cordis*, and of the Grecians, *pericardion*. And from the hearte procedeth the greate arterie, whiche is called in Latine, *arteria magna*, from whom brauncheth and procedeth all the other arteries y^{t} are in anye member of the bodye, by which meanes the spirite of life is caried to all the members of the same. And the hearte is an offyciall member, spermatike, and of a lacertous substance. The greate ende wherof in his being leaneth and inclineth moste unto the ryghte side, and the small ende leaneth moste unto the lefte side. And in the hearte have the venall arterye and the arteriall veine theyre begynninges, of whose processes and offices I speake immediatlye hereafter in the lunges. Here also mighte be to greate purpose declared the greate secretes of these firste movinges whiche are in the hearte, called in greke, *systole* and *diastole*, in latine, *contractio* and *dilatatio*, which are compared in this orbicle (of divers learned men) to the *primum mobile*, or firste mover in the greate orbe. For these movinges are the first cause of all other movinges, as of pulses in the arteries and so of all the rest. But because these secretes passe the capacitye of the comon sorte, and also that I shoulde breake my purpose of briefnes, I omit them."

[O maister Halle, moste admirable is thy ingenuitye!]

It is clear that the county seat of Kent, where Hall was engaged in practice, was as much the resort of empirics as the larger cities of our own country. The indignation and disgust of our author at the practices of these folk, is meted out on almost every page of his book, in no stinted measure. He evidently could not tolerate an intrusion upon the fair domain of his art, by the "beastlie abusers both of phisicke and chirurgerie." His "historiall expostulation" is an honest and manly protest against the

laxity of the laws which permitted the impositions of men and even women, who enticed and deluded the common people with astrology, divination and magical remedies.

It is a curious fact that both he and Lanfranc hesitated to publish their works because they were fearful lest the ignorant should, by ever so little understanding of the contents, prostitute the results of their labor to unworthy ends. The Italian charges his friend Bernard to deliver his letter to "no rusticall Fooles or Idiotes, leaste by the ignorance of such, and by theyr rude and uncunninge ministration, this my worke (made for thy love to a common utilitye) myghte redounde to some personnes hurte or annoyaunce." And the Englishman is "not ignorant that some will thynke that this booke (beyng published) wyll be an occasion for suche men to be the bolder to abuse the same science. But I knowe and am sure that they shall not learne in this booke any thinge wherwith to hurte. Neither have I published the same for them. And further, if any abuser of Chirurgery reade this boke, he shall, I trust, so finde hymselfe rubbed on the galle, that he shall be moved (if he have any shame) to leave his vice rather than more to use it."

Unfortunately, such men have now no more shame, than when these words were first penned for their edification. The details furnished of their performances in Maidstone, sound strangely like those which at intervals find their way into our public journals. There was, for example—

". . . One Robert Nicols, a false deceiver and moste ignorante beaste and of the profession of vagaboundes. Who boasted him selfe to have been the servaunte of the late Sergeant Chirurgien to the Quene's highnes. But now the matter being put in triall, he sayeth he was apprentice with a priest. Among whose wicked and prodigious doynges (which are infinite) one very notable chaunced in the yere of our lorde, 1564, the 26 of September. He poured in a purgation to an honest woman of good fame, one Riches, wydowe of Linton, a parysh three myles distant from Maydestone, whiche within three or foure houres at the moste, purged the lyfe out of hyr body, so violente was this mortal potion. The woman being before in perfecte health to all men's judgementes: being onely of simplicitie persuaded to take the same, by the deceivable perswasions of this Nicols. Who made fayre wether of all thynges, and hir to believe that he would deliver her of such

diseases as indeede she had not." We are not surprised to learn that the unfortunate woman had been told by the imposter, that "hyr lunges were rotten."

The volume concludes with a species of Code of Ethics in metre,* that is fully as admirable as that adopted by our own National Association, since it is based upon the only golden rule of professional conduct. There are fifty-four verses in all. I select two as examples of the rest:

> "See that thou laye disdeyne aside,
> And pride of thyne own skyll:
> And think no shame counsell to take
> But rather with good wyll."

> "Sithe Bernarde knewe not all hym selfe
> Thinke never in thy minde,
> But that at laste, by painfull proofe
> Thou shalte all erroures fynde."

The study of the medical lore of past centuries is calculated to inspire a feeling of contempt or admiration, according to the spirit in which it is conducted.

Some, for example, can thereby merely accumulate proofs of the immense superiority of modern researches. The Cilician tent-maker wrote from Ephesus to Corinth, in A. D. 57,† that there was "one kind of flesh of men, another flesh of beasts, another of fishes, and another of birds." In 1868, a member of the Royal College of Surgeons of London,‡ found a "community of protoplasm in the finner whale, disporting his eighty or ninety feet of blubber with an easy roll amid waves in which the stoutest ship would founder, and the microscopic fungus, finding space enough to multiply into countless millions in the body of a living fly." Between these two men there is, for some, a deep which they cannot fathom.

* If this production appear ridiculous in the eyes of any reader, let him consult the chess-problems, theatrical criticisms and society gossip, to be found in Vol. I of the *London Lancet*, published in 1824.

† I Cor. 15 : 39.

‡ "On the Physical Basis of Life." T. H. Huxley, LL.D., F.R.S. *Fortnightly Review*, 1869.

Another,* who justly deserves to be named the Chrysostom of medical authors, speaks in this wise: "Our ancestors, less rich than we in the knowledge which it is our privilege to utilize, devoted themselves incessantly to the labor of production. Though poor in facts, they put to the proof every fragment which chance or experience brought within their reach, as the athletes who exercise their muscles, and there resulted a force, which, though it may have occasionally betrayed itself by remarkable perversion, was yet gifted with an insight full of grandeur and prolific in value. Their efforts multiplied in proportion to the poverty of their resources, and their success was astonishing. While we, whose opportunities are unbounded, are enervated, relaxed, spoiled by the very abundance which is offered to us. We are capable only of receiving and becoming engorged. Our intelligence is oppressed with satiety, and perishes unproductive."

Is there no nobler lesson to be read in the palimpsests of medicine? The Rig-Veda indicates that the language spoken before the birth of the Aryan and Sanscrit, recognized the relations of husband and wife, brother and sister, that subsist in the English homes of the present.† Viewed from that eminence which all science, by virtue of its immortality, aspires to reach, there is a wonderful kinship between Buddha, renouncing his palace and his princedom "in order to make captive old age, disease and death," and the observer, who in 1873, describes the cryptogamic spores that yield a harvest of malaria.‡

The aims, disappointments, labors and triumphs of John Hall, and his fellow-chirurgiens, are ours to-day. And who can read the apostrophe that closes his little volume without a conviction that he knew of the phases and problems of human life, which are the same in succeeding ages of the world:

"The bodye of man is called in Greeke, *microcosmos*, that is to saye, a lyttle world.§ For it is a lyttle world in deede, to be con-

* Trousseau. Introd. Clin. Med. de L'Hot. Dieu de Paris, 1865.

† Comparative Mythology. Muller, 1856.

‡ Dr. John Bartlett, of this city, now convalescent after an attack of remittent fever, has discovered in his blood and saliva the sporules of the palmellæ, planted purposely in his sleeping apartment.

§ Mayhap Sir Thomas Browne, Kt. M.D., had read this page when he wrote "I take my circle to be above three hundred and sixty: though the

sidered in order of Anatomye, yea, a wonderfull worlde, such a worlde in dede as the greate worlde was made for the onlye sake of it. And as some have named it a lyttle worlde, so have other some called it a common weale, a royall kingdome. For in this common weale was never found rebellion, but every subjecte servisable to his governor, and every superior tendering the wealth of his inferyors. Oh worthy common weale, by whom all common weales may take sufficient example and vewe, howe to governe or to be governed! Oh wilfull and negligent man y^{t} runnest a stray as one not knowinge the rule of right! What nedest thou a preacher in such a case, where thou art sufficientlye taught, if thou wilte learne in thyne owne creation! Oh whye shoulde that creature be brute, or insypient, or as a salvage beast, whiche for his wonderfull giftes, geven him of God in hys creation, is called a lyttle worlde or a common weale! What a strange thinge were it that he whyche is a common weale in hym selfe, and carieth continually wythin hym selfe the perfect image of a common weale, shoulde, in a common weale, bee a cause of a common destruction."

ARTICLE II. — *The Premonitory Symptoms of Insanity.* By HORATIO R. BIGELOW, Boston, Mass.

In his Croonian lectures before the Royal College of Physicians, London,* Dr. Radcliffe alluded to certain conditions of mental habit, which might be considered as precursory of mental alienation. His intelligent observations have been so thoroughly corroborated in certain cases that have fallen under my notice, that I propose to go over this field somewhat more in detail, and to add to it other facts which are worthy of further investigation — especially those relating to the early ophthalmoscopic appearances. The first appreciable symptoms of mental derangement

number of the arc do measure my body, it comprehendeth not my mind: whilst I study to find out how I am a microcosm, or little world, I find myself something more than the great. There is surely a piece of divinity in us, something that was before the elements and owes no homage unto the sun." (Religio Medici.)

* Lancet, June and July, 1873.

are invariably announced by one or more of the following conditions:

1. Self-conceit.
2. Misanthropy.
3. Distrust.
4. Impulsiveness.
5. Melancholy.
6. A disordered fancy.
7. Delirious excitement.
8. Disturbances of the senses.
9. Untruthfulness.
10. Moral cowardice.
11. Instability of purpose.

The ocular appearances which I have found co-existing with one or more of the preceding, and which have been followed in due course of time by the actual outbreak of the disease, have been:

1st. Slight anæmia.

2nd. Slight hyperæmia.

3rd. Instability of eye movement, with increased tension (intra-ocular.)

4th. Intermittent irregularity in the supply and distribution of the retinal vessels.

Fresh interest is added to the consideration of these points, from the fact that the nature of the delusion may be generally predicated upon the character of the incipient symptoms, and that the force of the disease may be turned aside, entirely or in part, by a proper attention to the necessities of the case. The symptoms may occur separately, or two or three of the groups may come into conjunction—rarely, if ever, do we find a case in which they are all combined.

It is generally maintained that the ophthalmoscope reveals nothing abnormal in the intra-ocular structures, in the earliest stages of insanity—nothing which may not be a normal variation of the healthy fundus, or a constant symptom of numerous other brain lesions. This, in so far as it relates to anything absolutely pathognomonic, is, in the present infancy of our research, quite true; but I do unhesitatingly affirm, that there are certain conditions of the fundus oculi, which, in connection with the concurring

mental symptoms, would justify a diagnosis of approaching alienation. I have noted the one or the other of these conditions in so many cases, all developing into confirmed insanity, that I am persuaded of their very general presence.

As these appearances have not, to my knowledge, been particularly noticed, in this connection, I will take up their consideration at once, and then, should space permit, pass on to a brief review of the mental phenomena.

I. *Slight anæmia*, was observed in ten cases, with the following mental phenomena: in three patients there was misanthropy; in five, great dejection of spirits and melancholy; and in two, suspicions. The alienation generally assumed the form of acute melancholia. The arteries were diminished in size, and the normal proportion of bulk between them and the veins was destroyed; they did not exhibit the same amount of tortuousness as in the normal eye; the discal vessels were with difficulty made out. These symptoms became more prominent as the disease advanced.

II. *Slight hyperæmia.* This condition is characterized by an over supply to the intra-ocular vessels. Presenting this form were fifteen patients—six had delirious excitement; two, instability of purpose; three, melancholy; three, distrust; one, misanthropy. Developing: six, acute melancholia; four, acute mania; one, folie circulaire; four, mania with exaltation. The disc was of a more rosy hue than normal, its vessels slightly enlarged, and new ones, apparently, appearing; the vascular reticulum of the fundus covered a large extent, while the veins were swollen and tortuous. As the disease became established, the above became more and more marked, and finally resulted in an *intense congestion of disc and retina.*

III. *Instability of eye movement, with increased intra-ocular tension.* Three cases were recorded, all characterized by religious fervor, and developing into acute melancholia, which in one case was followed by an attack of maniacal delirium. There was rotary nystagmus in two cases, and horizontal in one. The oscillation was variable, being increased by any nervous shock, or by prolonged reading. There was slight increase of intra-ocular tension in both eyes; slight hyperæmia was visible in the fundus, but as one of the patients was menstruating at the time, it might have been due to that cause. In that case, characterized by horizontal nystagmus, it

is supposed that the lesion was due to a commencing cerebro-spinal sclerosis, as some of the other symptoms seem to point to that disease.

IV. *Intermittent irregularity in the supply and distribution of the retinal vessels.* Two cases came within my notice, one with great self-conceit, resulting in melancholia and masturbation, the other in the status epilepticus. The intra-ocular appearances were exceedingly peculiar. At one time the fundus would be quite normal, while its entire character would become changed during the same examination. The retinal vessels, running at first in a natural direction and of a healthy size, would suddenly fade away, to reappear, distended and tortuous; the least excitement was sufficient to induce the change. In neither of the cases could I discover any indications of abnormality in the heart's action, save the usual feebleness of general anæmia.

That some intra-ocular change, more or less evident, must precede every attack of insanity, announcing itself as the first appreciable symptom, seems to me probable. Every lesion of the brain, however obscure in its pathology, must appeal to a disturbed vascular supply for its solution, and the first notice of this change will be given us by the ophthalmoscope. What the chemico-physiological change may be, by which the different forms of insanity are superinduced, is a question as yet beyond our ken, and hence we can apportion to no form an exclusive and particular set of intra-ocular appearances, but from extended observations we can generalize those conditions which are present in certain states of alienation, and by combining these with the mental phenomena, we can predict the result.

It is my belief, that many appearances have been reckoned among the variations of a normal fundus, which are properly the forerunners of commencing disease, and that owing to this latitude of description, many have fallen into the grave error of ignoring slight abnormalities of vision.

The mental phenomena anteceding the disease, will find ample corroboration in the experience of those who have made the study of insanity a specialty. The exaggeration of a vice, or a natural bent of mind, the development of a taste heretofore unrecognized, or the complete change of a virtuous, honest life, into unreliable, unwholesome channels, are indicative of great cerebral disturbance,

and demand the closest watching, with the most circumspect treatment. That some of these changes, oftentimes of the slightest appreciable nature, *do* precede every case of alienation, I have no reason to doubt; and looking at mind as the outcome of cerebral action, rather than as a manifestation of an unknown entity—neither matter nor spirit, but possessing somewhat akin to both—this precedence of the disease by the heralds of disturbed function would appear to be eminently probable.

From being an affectionate person, kindly disposed to all, the patient may, at first, manifest notable irritability of temper when reproved, or counseled by parental authority; this gradually grows into dislike of restraint, of association and connection; then, becoming pure misanthropy, it includes the whole family circle: it ignores the closest ties, and even may extend to the human race in general. Combined with this, there is often evinced a suspicious and distrustful disposition, as if they of the household were plotting against the patient's happiness, thus building up a delusion which inevitably results—a delusion or fear of being killed or poisoned.

Not until this evidence has assumed potential form, is the physician consulted, and then the disease must be left to run its course; whereas, the condition of cerebral erythism, which was the essence of the subsequent illusion, might have been dissipated.

In other cases, the person is conscious of a manifest want of *self-control*, of *voluntary power*—he cannot *will* to do that which he desires, and must be *led* like a child to its accomplishment. This want of control, carried to its greatest extent, constitutes *moral insanity*. A singular manifestation of this weakness was once noticed by me, in a patient exhausted by hysteria, and in whom, subsequently, acute mania obtained; a fly alighted on his forehead, when the right arm was raised, almost unconsciously, to drive it away, but ere it was half-way to its journey's end, the question arose in the mind of the patient, whether the left arm would not answer as well—the right arm dropped, and both arms remained passively at the side, while the fly remained undisturbed; the patient, unable to solve that stupendous question of *free will*, could not exert his brain power sufficiently to give the necessary stimulus to either arm.

I have seen patients whose lives had been characterized by stern integrity, unimpeachable honor, and great moral fortitude, suddenly become less watchful in their statements, less circumspect in action, less a "hero in the strife." Little by little, as the cerebral changes received no check, the old self seemed to fade away, and a new creature—unreliable, untruthful, and full of moral cowardice—to obtain sovereignty. Others will assume the most inconsistent and immoral views of the great social laws, sustaining themselves by close logic, and classic reasoning; while others will assume as a reality that which is but the fictitious image of their own imagination. And so on through the series, we meet with cases of confirmed insanity, in all which we may trace the prodromata to some of these changes —often overlooked, so stealthily do they creep on.

In the offspring of neurotic families, and in those where a powerful *neuriasis* is ever calling out strange fancies, or unusual modes of thought, we should especially be on the watch for the least indication—that by healthy association and intelligently directed treatment we may abort the disease.

With Dr. Radcliffe's recently propounded views of mind, I cannot sympathize. Do what I will, I cannot logically enter into that subjective introspection which hypothecates a spiritual entity as presiding over all forms of cerebral action—which from a super-exalted standpoint seeks for a First Cause in the wondrous inter-relationship of a scientifically ordered, intelligible existence—*matter*, with an unknown, unfathomable, suppository ideal—*spirit*. To me the wondrously endowed, chemically organized brain matter, susceptible of infinite variety and change, is a more scientific explanation of mind, the result of these delicate physiological actions, and just as beautiful, as the more vague and intangible, spiritualistic view. Neither in memory, can I recognize anything to controvert this opinion. That a measure of memory exists in the thing remembered, is to me most improbable, as daily evidences occur wherein lapse of time is sufficient to efface entirely, or in part, the integrity of this faculty, by creating great external changes.

ARTICLE III. — *Abstract of the Discussion in The Pathological Society, London, June and July, 1873, on the Anatomical Relations of Pulmonary Phthisis to Tubercle, with Remarks.* Reported to the Zanesville Academy of Medicine, Zanesville, O., Oct. 21st, 1873, by Z. COLLINS MCELROY, M.D., of Zanesville, Ohio.

During the months of June and July, present year, 1873, a discussion took place in "The Pathological Society" of London, "On the Anatomical Relations of Pulmonary Phthisis to Tubercle," which was, in many respects, one of the most remarkable ever had in a medical body, for the acknowledged giants of the profession of that city were the contestants.

The debate was characterized by the almost extreme courtesy of the speakers to each other; entertaining, as they did, very diverse opinions on many points, which none seemed afraid to bring forward. Then, again, there was an equally remarkable agreement as to the more obvious, as well as minute and technical points of pathological histology, after death from so-called phthisis. These were illustrated by microscopical preparations, and drawings, enlarged images of which were shown on screens. On these there was a substantial agreement, but there it ended, for the interpretations, lessons, inferences, or deductions, drawn from these changed conditions of structure, varied very widely. And the general results of the discussion were both positive and negative, the latter preponderating.

Perhaps one of the most noticeable positive results was the clean sweep made of current pathological notions, opinions, or speculative beliefs, of the intimate relationship between tubercle and phthisis, as cause and effect. So far from this being the case, it was made evident during the discussion, that the very reverse is probably correct, viz., that tubercle, so called, was a result, or at least only a concomitant, not alone of the condition called phthisis, but of pneumonia, scrofula, and divers other conditions.

Gentlemen in the profession who have posted up in their minds as a finality, that phthisis, so called—consumption, popularly—depends on tubercles in the lungs, are in a Rip Van Winkle sleep, and if they ever wake up, will find their pathology out of fashion entirely.

Dr. Wilson Fox, who opened the debate, made a statement of the anatomical condition of the lungs of children dying from typically acute phthisis; and describes them as follows:

"Semi-transparent granulations; white granulations, neither absolutely opaque, nor absolutely semi-transparent, with a certain degree of firmness. Granulations like the semi-transparent, firm, and more or less caseous in their center. Yellow, soft granulations, somewhat prominent, easily crushed, but not easily removed from lung tissue, varying in size from a poppy to a mustard seed, and more rarely a split pea. Then, distinct caseous granulations, sometimes with, and sometimes without, a semi-transparent zone surrounding them. Groups semi-transparent, or opaque granulations, one, two, three, or more in number, reaching the size of the split pea, or bean. Indurated granulations surrounded by a zone of pigment. Tracts of indefinite extent, one, two or more inches in diameter; irregular in outline, granular on section, which sometimes pass insensibly into so-called gray infiltration. Cavities, from an infinitesimal speck to that of hazel nuts, or larger. Sometimes granulations softening into cavities, either the softer, white, or yellow. The semi-transparent granulations, *per se*, as far as I have seen them, are not found softening into a cavity, without some intermediate change. Tracts of gray, semi-transparent, gelatinous in appearance, what we know as either gray pneumonia, or gelatinous pneumonia, or gelatinous gray infiltration; and red pneumonia, bronchitis injection, or punctiform extravasation; and dilatation of bronchi, and some other appearances, having little to do with the subject under consideration.

"The point I wish to insist on is, that the gray granulation—typical tubercle of Virchow—does not exist alone in the majority of cases of acute tuberculosis of the lungs of children, but is almost always found with other forms of change, which, in a large majority of cases, so predominate that the gray granulation is the rarer appearance, and is even difficult to find.

"By gray granulation I allude to a body composed of minute cells about the size of a white blood corpuscle, or smaller in older forms, separated by a delicate net work, and may be taken as the typical structure of tuberculosis. There are often much larger cells, sometimes the $\frac{1}{200}$ or $\frac{1}{300}$ of an inch in diameter, with many nuclei. I have never been able to isolate them. Those charac-

teristics of tubercle in the lung are these small cells, with a nucleus, often nearly filling the cell wall.

"The point I wish to lay before the society is, that all these changes—caseous infiltration, large pneumonic product; mingling of pneumatic products with reticular growth; induration of reticular growth; infiltration of that reticular growth throughout large parts of the lung, which then acquire a more or less caseous appearance—all concur in the most typical forms of acute tuberculosis.

"I venture to lay down these propositions as corollaries to these points:

"1st. Speaking in the abstract, tubercle may occur without inflammation in the elements of the tissue in which it is developed.

"2nd. That tubercle is found in addition to inflammation of the tissue in which it occurs.

"3rd. That in the liver and kidney in certain blood states, you may have tubercular growth, as part of the signs of the acute disease, or constitutional affection, in which no inflammation of the part in which it occurs can be detected.

"4th. That in mucous and serous membranes, or tissues, the mixture of inflammation and tubercle is constant.

"5th. That in the lung the implication of the cell wall (air cell) is the most constant and typical lesion of phthisis. Excluding ulcerative bronchitis, ulceration after pneumonia, indurated pneumonia, lesions from dust, cancer, and syphilis, I have, during my life, only found three cases of phthisis which did not present the gray granulation, or soft granulation, or such caseous change, or infiltration such as I have described.

"Chronic phthisis is distinguished from acute by the slowness of induration in these growths, and not by their quick or acute destruction.

"I have given no definition of tubercle, and am not going to do so; but so far as we know at present of tubercle, it is a lymphatic overgrowth produced by irritation. Lymphatics have been traced in sufficient numbers in the cell wall (air cell) to allow us to believe that lymphatic tissue must play an important part in the changes of lung tissue."

Dr. Moxon approved of the statements of Dr. Fox, and summarized them as follows:

1st. That miliary tuberculosis of the lungs has neither the anatomical nor histological constancy, or peculiarity, commonly ascribed to it.

2nd. That miliary tuberculosis, in short, exhibits all the products found in active chronic phthisis.

3rd. That all the other products, constituting caseous pneumonia under various forms, are essentially of the same histological structure, which Dr. Fox thinks is characteristic.

4th. That the other characters of chronic phthisis are fairly traceable to time.

5th. That he, Dr. Fox, asserts the identity of all phthisis, based on this peculiar microscopic matter.

Dr. Moxon did not think that the basis of a definition of phthisis should rest on purely histological grounds. There was nothing specific about it. If inflammation was set up in a person, he might be said to be on the high road to tubercle. Did not think due attention had been given to the developmental changes in tubercle. Thus, the life of a tubercle was inside of three months, so that in five or six years — the time allotted to so-called fibroid phthisis — many generations of tubercle must have come and gone, doing their natural work in destroying, first, their matrix, and then themselves, leaving behind them the scar of fibre in which the nature of our bodies always enshrouded the traces of such mischief.

Of tubercle, since we can define its cause, it is not specific. Neimeyer's view, that tubercle is a development of inflammation, is essentially weak — not sustained by facts.

Dr. Cayley thought that if tubercle was to be regarded as a lymphatic overgrowth caused by irritation, then tubercle cannot be distinguished, since the so-called adenoid tissue, to which the term lymphatic overgrowth by irritation was applied, occurs in parts of the body free from any kind of irritation. It is found in the margin of hard chancre, in a soft node, in early stages of cirrhosis of the liver, and can be produced in lung tissue by a great variety of causes, as grindey dust, chronic pneumonia, pleurisy, etc. Thought the term tubercle should be restricted to the gray granulations.

Dr. Beale agreed as to the descriptions of Dr. Fox, but differed in several important points of interpretation. Did not think the tubercle corpuscle had anything to do with lymph corpuscle, or

adenoid tissue. Thinks that "irritation" is too loose a term. Virchow's doctrine of irritation would not stand scrutiny, for it leads to the ridiculous conclusion that minute particles of protoplasm, bioplasm, or whatever else they may be called, have the power of sympathizing with other particles. The term irritation must be looked upon as the Abracadabra of pathology.

"It seems to me that though it may be impossible for any one to say that this or that is a tubercle corpuscle, we must assent to the doctrine that it is a special thing. It would be as impossible to distinguish any one of these compound masses of different forms of living matter, as to distinguish the corpuscles of the embryo of one animal from the other, if they were mixed together. Under different circumstances, no doubt, the tubercle corpuscle will give rise to a differently formed material, fibrous, soft, glistening, or a matter which at last may degenerate into that which we know as caseous substance."

Dr. Bastian said the notion that cheesy degeneration, or caseation, constituted the essence of tubercle, must be thrown aside, as one which a larger experience could in no way sanction. The characteristics relied upon by Laennec, and others, had been shown to be almost wholly valueless as characteristics of any special and peculiar something, which it had become the fashion to call tubercle. Inasmuch as such products, both in their incipient and advanced stages, were specially abundant in the lungs of persons dying from phthisis, this affection became one of which tubercle could no longer be considered the pathological essence. It was now known that epithelial impactions, and overgrowths in the bronchial tubes, and fibroid infiltrations of a chronic inflammatory character or nature, were, in the main, the special tissue changes which subsequently gave rise to the various lesions of chronic phthisis.

Objects to conclusions founded on experiments on rodent animals in the artificial production of tubercle. Believes them to be so peculiar as to render any conclusions hastily formed from experiments on them, unsafe to apply to human pathology altogether. And is impressed with the altogether gratuitous and unnecessary difficulty besetting the paths of teachers who endeavor to explain to students what is and what is not tubercle. To this conclusion he has come slowly and deliberately, after years of experience as a teacher.

Dr. C. I. B. Williams cannot but think that this debate on tubercle has been more about words than things. A great many things have been shown, and there is ample proof of much diligent labor and careful observation, more, apparently, with the object of finding out what these things shall be called, than to find out their real nature.

"The term growth, or growths, is applicable to tubercle only in the most limited sense. Except at their first inception they do not grow as other growths and tumors do. They harden by the increasing number and consistence of their corpuscles. And this induration, by depriving them of pabulum from the blood, leads to their ulterior decay, either by caseation or dwindling. As growths they are insignificant and abortive, and their chief characteristic is early decay. This is the foundation of their consumptive character, tending to the destruction of the tissues, and waste of the body. That miliary tubercles are essentially modifications of lymphatic glandular tissue, is, I think, fairly proved by recent observations, confirming the opinions of Portal, Broussais, Abercromby, and others. The similarity in scrofulous disease in lymphatic glands, and tuberculous disease in the lungs, and their succession in the same individuals and families, have been generally accepted as strong evidence in favor of their identity; and rendered most probable the views of Portal and Broussais, founded on anatomical as well as clinical observations, that miliary tubercles have their seat in the lymphatic textures. Virchow's declaration that tubercle resembles lymphatic or adenoid tissue, together with recent microscopic observations, have produced a general concurrence of opinion as to their resemblance, if not identity. I do not concur in Dr. Fox's declaration, that tubercles are lymphatic overgrowths; nor do I believe the lymphatic system is at all necessary to the production of other tuberculous formations not granular. There is an intimate connection between the form of miliary tubercle and some elementary parts of lung structure.

"The corpuscles of miliary tubercle are lymphatic, developed by irritation in adenoid tissue; while the corpuscles of inflammatory irritation are the pale blood particles, migrating, and forming the corpuscular exudation matter of scrofulous and other low types of inflammation. And since lymph corpuscles are identical in all their characters with the colorless corpuscles of the blood, so we find

the same resemblance in appearance, and the same unity in nature, in the multiplied corpuscles of diseased lymph in miliary tubercle and those of inflammatory exudations in scrofulous subjects. In this there is my key to the two-fold seat and origin of tubercle, or rather of consumptive disease:

"1st. Lymphatic; miliary; infective; scattered.

"2nd. Inflammatory; diffused; local.

And thus we get explained the identity, and yet the difference, of all the chief elements of consumptive disease—granular and diffused—differing in form and seat, but alike in their corpuscular composition and proneness to decay.

"In ordinary nutrition, and even in hypertrophy, the growth of the tissues may be affected by the activity and proliferation of their proper cell germs, or bioplasm. But in inflammation, and similar states of vascular excitement, there is an overflow of plasma through the coats of the vessels, with nascent materials, ready to form without the aid of any cells or germinal matter from old tissue. The result is the coagulable lymph of Hunter; the fibrinous and croupous of Rokitansky; the fibrinous and corpuscular of Paget; the plastic and cacoplastic of my own; thus accounting for the relations of tubercle or phthisis to inflammation more satisfactorily than the maze of growths in which the northern Germans mystify the subject. The more fibrinous and less cacoplastic exudation becomes organized into a tough contracting tissue called fibroid, and other like chronic consolidations. The more corpuscular and aplastic degenerate into cheesy matter, to soften and decay, constituting yellow tubercle, and similar results of scrofulous pneumonia. And these phthinoplasms, as I call them, whether they wither and dwindle, like fibroid, or caseate and decay, as tubercles, and corpuscular indurations, represent different degrees of the same consuming disease, which brings the flesh-forming, and life-giving materials of our body to premature decay."

Dr. Green thought, on the whole, it were better to drop the term tubercle, since its retention tends to cause confusion among pathologists, from the utter impossibilty of saying that this is or is not tubercle.

Dr. Crisp thought that the study of such a question as the relations of tubercle to phthisis ought not to be confined to the

human body, but extend to the whole range of inferior animals, determining, by experiment, in what kind of organization each histological structure was first met with, and how it differed from that in man. In this ascending line of investigation the discrepancies and differences now existing might be satisfactorily explained and harmonized.

Dr. Pollock reviewed at length the history of tubercle, from Laennec down to the present time; and concluded, that while there was typical pathological unity in phthisis and tubercle, the disease called phthisis was the manifestation of various morbid agencies, lymphoid, inflammatory, and degenerative, which, in their various evolutions, constituted the several varieties of the clinical affection.

Dr. Wilson Fox closed the discussion very lengthily, going all over the ground again; endeavoring to answer objections, and reconcile facts and appearances, but admitted that the search for specific or definite pathology for a specific or definite disease, or diseases, had been a failure; and that the anatomical and pathological relations of tubercle to phthisis were still chaos. He wouldnot, however, in consequence, drop the term tubercle, nor for the present cast aside names for diseases in our literature. He had began the study of phthisis, impressed with the belief that there were a number of specifically different diseases grouped under the general name phthisis, but his investigations had long since convinced him to the contrary.

The foregoing abstract of the debate, or discussion, was taken from the printed reports as they appeared in the American reprint of *The Lancet*, for July and August, and are mostly in the very words of the several speakers, as published. Sentences were selected in which they seemed to approach definiteness in their statements. It has been made with care, and though more or less broken and detached—scrappy, as it were—and lacking the fullness of the thirty closely printed pages reported in *The Lancet*, yet, I think, fairly conveys the conclusions of the several speakers.

In commenting on the discussion, the first thing to be noticed as striking and peculiar, is, that a discussion on such a restricted topic as the anatomical relations of phthisis to tubercle, occupying so much of the time of men who probably have little to waste,

should have taken place at all. Nor need it be an occasion for surprise that no positive results were reached, since it must have been known to the speakers themselves, as well before as after the discussion, that there were none to be reached.

Several of the speakers apparently chafed under the restraints imposed on them by the nomenclature in use by the profession to designate appearances only, but not the facts behind them.

An effort to get the term tubercle dropped out of use was made, but it was unsuccessful. Another term in still more frequent use—irritation—was severely handled. But the weight of "authority" was against disturbing the technology now in use, and the matter was dropped. And yet that is the most urgent need of medicine now. Many of the terms used in medicine have descended to us from the remotest antiquity unchanged in significance. Their definitions cannot be changed, and the only alternative is an entirely new nomenclature, to correspond with the facts which underlie appearances. Entire changes in nomenclature have been made in other departments of knowledge, a notable example of which is seen in chemistry. What was ferri sulphus, when I was a student of chemistry, is now feric sulphide. We who now write for "bromide of potassa," or, in the language of the Pharmacopœia, "potassii bromidum," will find it "potassic bromide" in our new works on chemistry. Of course this change has not been made without opposition. But it is being gradually adopted, and at the end of another generation will probably be in universal use.

Now what has been done in chemistry, and is now doing in chemistry, can be done in medicine, though perhaps more slowly. But as *The Philadelphia Medical Times* puts it, "'Nestor' says, leave innovations alone, or you will lose your bread and butter." And so bread and butter may, for many generations, prevent the necessary modifications in medical nomenclature, to the end that it may take rank with other sciences in exactness.

There was not, in all probability, a solitary Fellow of the Pathological Society of London, at that time, who did not know that life—all life, animal and vegetable—on our earth, has but three fundamental factors, viz., materials, forms of structure, and motion in materials of structure; or, in other words, materials, force, and forms of organic structure; and that they had no power either to create, or annihilate, either materials or force; and,

except through natural channels, or modes, they could not create or make or combine materials into an organic form of structure, capable of performing a function. And that, as physicians, their sole power laid in a partial control of force, or motion in materials of structure. That to study, or discuss properly the anatomical relations of any given symptoms, or phenomena, before death, with the conditions, or states of structure, or materials of structure, after death, the whole of the conditions of life—evolution, growth, maturity, decline, and dissolution, or, in other words, histogenesis and histolysis of the tissues—must be brought under consideration. Yet, guided largely by nomenclature, they discussed a narrow, and, in fact, not a discussable question.

As pertinent to the question, and a necessary preliminary to its discussion, an approximate or definite settlement must be arrived at on the following points: What relation does the body of man bear to the materials and forces of nature about him? How do the materials he uses as food, the water he drinks, the atmosphere he inhales, combine to form living flesh, capable of performing a function, or functions, chief among which is repair from new material as momentarily wasted; and multiplication and perpetuation in gross of his body? Is it by the ordinary forces of nature, "stored up" in the food he eats, and made available in his body, by "modes" during its complex chemical changes there? Or, is it by some special force not manifested elsewhere in nature than in living bodies? Is it by chemical means, *i. e.*, by reaction between elementary atoms or molecules of matter; or by mechanical means, as in building houses, bridges, or ships? What are the means by which the structures are maintained? Is it by chance, or accident, or does it take place in obedience to law and order? Has what we call force anything to do with the metamorphosis of food into living flesh? Are the materials so varied in form and color found in the lungs after death from so-called phthisis, matter which has failed to reach natural structural condition? Or, is it matter on its downward career from its condition in natural living structure? What are their ultimate constituents, and in what respect do they differ from the food eaten during life? Are they from food at all? In what respect do they differ from the ordinary condition of similar elements elsewhere in nature? Are their existing conditions—chemical and physical appearances—due to a deficiency or

excess of force, or misdirected energy in either the ascending or descending scales of organization? Are they due to conditions or causes internal or external to the body? If so, what, and why? How much is certainly known, and how much extremely probable, in regard to it?

These, and many more like questions, must be answered and settled, or approximately settled, before any intelligent inquiry can be made into the relations—anatomical relations—of states of the living body, with post mortem appearances.

These questions are not asked because they are supposed to be posers, as difficult questions were called in my school-boy days; or because they cannot all be answered either certainly, or approximately, with almost certainty. For there was not one of the speakers in the debate in the Clinical Society who could not have done so then, and cannot do so now. The truth is, the question they discussed was not such an one as its learned fellows ought to have discussed, for the results obtained were not a compensation for the work performed. No such narrow topic can ever be discussed properly, because the factors to it are at best only hypothetical, or traditional, founded only on external appearances. We all talk, learned and unlettered, of sunrise and sunset, yet most of us know that the sun neither rises nor sets, as the words would imply, as ordinarily defined. Thus, the conditions of living bodies designated phthisis, are so called on hypothetical considerations only. The peculiar chemical state, and physical appearances of materials, found in the lungs, and elsewhere, after death, are called tubercle, on hypothetical grounds only; and conclusions or deductions drawn from such hypothetical premises could not and did not disclose any certainties, as this debate has so strikingly and clearly demonstrated.

Two years since, a large part of a populous city in the State of Illinois was laid waste by fire,—who does not remember the Chicago fire? Nothing of consequence was saved from the burnt district; all property, and some life, shared a common fate in the conflagration, so rapid were the chemical changes in the material there.

Now, Chicago before the fire, so called, was composed of organized and unorganized material, having forms of structure to

adapt it to the performance of the functions of the traffic and life concentrated there.

And Chicago before the fire, and a human body before death, differ not so much in material, or in forms of structure to perform special functions, as in this fact, that while both perform function at the expense of structural forms, Chicago, as a city, possessed no inherent capacity for repairing daily waste from new material, while living bodies have that inherent capacity, but not to an unlimited extent, else living bodies would be immortal. The conflagration in Chicago destroyed no material, it only changed its forms of structure, as an incident to the changes in the chemical condition of its material. And no force was lost or destroyed; but the force stored up in its materials was suddenly liberated, and found its correlation in mechanical motion in the surrounding atmosphere, and in the new chemical conditions of its material, which then presented other and widely different physical appearances.

Without repair of its structures year by year, as they were wasted in the performance of function, time would have completed the work of the destruction of Chicago as completely and effectually as the conflagration. But the *post ignum* appearances and condition of its matter would differ widely from their *post mortem* appearances after natural decay.

And so of living bodies — human bodies — their capacity for self-reproduction is limited in time. Little by little the forms of structure are lost, as the post mortem appearances of the octogenarian abundantly demonstrate. Time,* and wear and tear, complete their work here, just as it has done for cities as populous as Chicago was, in the past.

Life is terminated by various causes at all stages, suddenly, by missiles of war, accidents incident to civilization, so-called diseases, as from chemically complex matter introduced from without, capable of setting up higher rates of motion, and changing forms of

* We all speak of time as something absolute, or real. But this is only true in the same sense as we speak of the sun rising or setting. Time is the relative and ever changing relation of moving masses of matter to each other. There is no abstract time, *i.e.*, a something distinct from the relative position to each other of masses of matter, large or small. There are no two points on the earth's surface having the same apparent or real time, at any moment. The reality behind what is called time, is motion by matter.

structure, as the virus of serpents and insects; or the virus whose results are severally designated small pox, yellow fever, Asiatic cholera, etc. Here, post mortem appearances differ widely from those of the octogenarian, mainly wrought, as we say, by time, but, at all events, by causes operating slower than those giving rise to the states named.

Again, cities have been desolated by violence, other than fire, *i. e.*, mechanical motion in their material, as by explosions, incidents of war, earthquake, etc., more speedily even than was Chicago by chemical motion in its materials — fire, though the results are the same, viz, forms of structure, upon which their utility and value to human society depend, are broken up, and capacity for function lost. The physical appearances of their material would vary as the motion in it had been mechanical or chemical, and time occupied in effecting them; the force in both cases being the same, and differing only in mode and velocity.

Like many thousands of my fellow men, I have made a *post ignum* examination of the burnt district of Chicago. I found that all material capable of assuming gaseous or liquid conditions during the fire had disappeared; and in place of the *ante-ignum* Chicago, with its tide of life and traffic, there only remained the non-gaseous matter, forced into new and often curious combinations. The mass of iron in the Park — a memorial — weighing several tons, existed in some commercial establishment before the fire as kegs of nails.

My lesson from a *post ignum* examination of the burnt district of Chicago, was not to note and map the forms, appearances and colors its material presented. A new city had in part arisen, and was rising, from amongst the ruins or *debris* of the old, which had so suddenly passed away. The materials of the new city were partly old, and partly new, the new largely predominating. But it was still Chicago. Of this, more presently. A good many of the later years of my professional life have been devoted to the study of my own body, and naturally enough the question "how does the food I eat become part of my living flesh?" came up for solution. The hypothesis of a special vital force as the means, though accepted as solving the problem during so many centuries, was soon dropped out of consideration. Then I found it necessary, too, to similarly dispose of much of the physiology now

currently accepted on the subject, before any progress was made in obtaining a solution satisfactory to my own mind. Then, collecting the facts of experiment and observation obtained by others, and adding to them facts and observations, together with some experiments, of my own, I started out *de novo* to track food to living flesh. And I now entered on the investigation without any preconceived ideas on the subject, other than those from which I had endeavored to divest myself. In prosecuting my inquiries I soon found myself in possession of a considerable mass of facts, which did not fit well together. Men of science point out the uselessness of mere collections of facts, as well as the mistake of confining investigations concerning their relations to each other within too narrow limits. They have shown, also, the importance of comparing the ascertained facts of one subject, with the facts of other and apparently little related subjects. In this way much useful information, and many instructive analogies, are obtained. It is from facts viewed in relation to known conditions that we can alone hope for useful additions to our knowledge.

I was not long in discovering that my own body presented too many complexities to allow a solution to be reached from its study, and it became evident that I must get the key among simpler conditions of life.

In the vegetable world I found the means for reproduction, *i. e.*, the force, and part of the material, stored up in what is called a seed. That to grow, or perform its function, a seed must be surrounded by certain conditions, as new material, moisture, atmosphere, sunlight, and a certain range of heat, that is, motion of matter, and protection from enemies. That when the seed was ripe, that is, means perfected for reproducing, multiplying and perfecting its kind, in the case of annuals, the parent plant was dead, or died soon after; and with perennials, coincident with the fall of foliage. That there was individuality in the vegetable realm of nature, as the animated. That to preserve identity, grafts, and shoots, or cuttings from the parent plant, must be used in multiplying any special kind for desirable fruits, or flowers, as apples, pears, grapes, roses, etc. That the seed reproduced its kind, but not with perfect identity, for each new plant from a seed had its own individuality.

In this scrutiny of the vegetable world, it did not escape my

notice, as I have already stated, that the ripening of the seed — that is, storing up the force in the necessary material to form the structures of the new plant up to that point and time when it could appropriate new, and other material, not supplied, or stored up by the parent plant, to its further growth and evolution—was simultaneous with the decay of the parent plant.

Then, my observation had shown me that the old Chicago had stored up the means prior to its destruction, or death, by fire, not in material, but in its trade and commerce, to rebuild itself, partly from old, but mostly from new material, which were analogous precisely with the conditions for reproduction in the vegetable world.

With this information I returned to the human body, to inquire whether there was in it any like, or analogous, provision for converting food into living flesh, continuously, during the life of each individual. Would the law that the old stored up the force for its own reproduction from new material, apply to the human body? I concluded that it would, for the law seemed to be universal that the new must proceed from the old. To be applicable, then, to the human body, there must be an apparatus fitted by structure and distribution to separate the material in which the requisite force was stored up, from the general debris of the tissues, and restore it, or unite it, at a proper place and time, with new material, to the blood stream.

There is in the human body an elaborate and complicated apparatus, distributed to every part of it, to which no adequate function has, up to this time, been assigned by physiology, to wit, the lymphatic system. Economy of material, catching up that accidentally escaping from the blood vessels, was assigned as its chief function elsewhere than in the abdominal cavity. Here, though identical in histological structure, a different function was assigned, viz., to take up the products of digested food and convey them into the blood.

As such an arrangement, to wit, separate functions at different points, for identical structure, histologically, would be a violation of the laws prevailing elsewhere through organic life, accepted physiology in regard to the so-called lacteals and lymphatics was probably in error, and was, therefore, with the vital force set aside, and a uniform function attributed to the system throughout the

body; the largely increased volume of material found in the lymphatics or lacteals, during active digestion, due to increased waste of structure as a consequence of the increased duty performing, for here, as elsewhere throughout nature, organized and inorganic, function is performed at the expense of structure and structural arrangement of material.

Accepted physiology in regard to the entire digestive process, so called, is probably in a very incomplete condition. Admitting, for the moment, that the function of the lymphatic system is as here pointed out—and it corresponds in dignity with its histological structure and distribution, while the functions now attributed to it are sadly lacking in that respect—it becomes possible to trace food through its various stages and processes to living flesh more intelligently than through present physiological conceptions of function of the several parts concerned.

The food eaten by human beings is by chemistry arranged into a few groups of dissimilar chemical arrangement of material, viz., fibrins, albumens, gelatin, starch, fat, sugar, gum, etc., etc., from animal sources and vegetable seeds, and in a few instances the bodies of vegetable plants, in which some woody fibre and insoluble matters enter.

Now, it seems to me the sole function of the stomach is to effect solution of these "proximate principles" of animal and vegetable structures or materials. This is accomplished through several agencies, as pepsin, acids, etc., but mainly by water. When solution is effected, it is passed directly into the venous blood stream,* and goes forward to the liver. Here, some not well understood chemical changes occur, prominent among which is the transformation of starch into glucose. But, whatever they are, the result is sent forward to the right heart on its way to the lungs.

The stream pouring into the right heart—blood pump, simply—would therefore be thus complex:—

* Physiology acknowledges that a part of the material introduced into the stomach as food, pursues this path. My conclusions are, that all follow in the same way; and so rapid is the process of repair of wasted structures from new material, that a tired man's meal is partly in living structure before it is finished. And it is so also in sickness; proper food is rapidly disposed of in the same way. In many conditions of sickness—and that called phthisis, among them—this capacity is lost, from failure of the function of the lymphatic system in part.

1st. Old material—venous blood, from the debris of the tissues of all parts of the body.

2nd. New material, from food introduced into the stomach.

3rd. Lymph, containing the material in which the wasting structures have stored up the force for their own reproduction from new material.

In the lungs this complex stream meets the gaseous atmosphere, changes, not now understood in detail, take place, a certain proportion of effete material being detached, and making its exodus from the body at the mouth and nostrils.

The stream returning to the left heart differs chemically, and in physical appearance very widely, from the ingoing stream—arterial blood—the material in which is stored up the force for the reproduction of the momentarily wasting structures as function is performed. From the left heart it is distributed to the capillaries, the actual seats of molecular waste and repair. It seems to me that this synthetical tracery of food to living flesh points to the lungs as the actual seat of what is known as digestion, if that means the bulk of the chemical changes in food to fit it to become living flesh.

In good health we know nothing of our lymphatic system. And in sickness it has been little studied, except when there is palpable and visible modifications of its glandular structures. Scrofula is the general term expressive of these more obvious changes and failures of structure, confessedly conditions not much under remedial control; for not alone is the lymphatic system in disorder, but all the other structures, depending, as it seems to me they do, for their forms of structure and capacity for function in the general economy of each living body, on the lymph.

Viewed thus, to discuss the question of "the anatomical relations of tubercle to phthisis" in nature and essence, was an error, and could not by any possibility lead to other than negative results.

Certain other great general principles have been reached in my life-long investigations, which I formulate as follows:

1st. The main purpose of all life, animal and vegetable, in the general economy of nature, is its own preservation, reproduction, and multiplication.

All other phenomena are incidents only of this greater purpose.

Flowers, in the vegetable world, are only incidents of the formation of the seed. Intellectual phenomena in animal life are, in like manner, only incidents of the capacity, exercised or not, of self-reproduction and preservation; are not essential, are added, in virtue of "free moral agency;" and the structures on which they depend, not being essential to self-preservation, perish with each possessor, or leave only, or transmit only, increased "possibilities" of reproduction by processes known as "educational."

2nd. That for each special function performed, simple or complex, there is behind it, and on which it depends, special molecular arrangement of material; and as this special arrangement of material is modified, wholly changed, or rate of motion in its material advanced or retarded, function is correspondingly modified or lost.

3rd. That function is always, and under all circumstances, performed at the expense of special molecular arrangement of material, or structure.

This is the basis of all "diagnosis" in practice, not entirely empirical. Nosology and nomenclature for changed functions are the barriers which prevent the speedy attainment of the highest skill in "diagnosis," by the rank and file of the profession. Far too much attention is now given to naming things, and too little to ascertaining the reality of things, in sickness.

4th. That function is, in like manner, the index, language, or expression of molecular arrangement of material, or structure, from which it proceeds.

The vast quantities of material annually passed through the commercial channels of Chicago, which ultimately become animal structures, do not perform functions of life until they have been arranged in molecular forms of structure. Corn, oats and hay will not transfer merchandise, produce, or propel street cars, or any other actual functions performed by the various animals daily driven through its streets, until transformed into animal tissues. These materials may be burned in furnaces, producing, as the single phenomena of their combustion, the motion of matter called heat, which may be utilized by correlation in mechanical motion, but cannot be made in this way to perform the complex functions of animals.

So, automaton imitations may be and are made to move, produce sound, and imitate other phenomena of life, or living things, but

they lack both fitness and adaptability, and the capacity of self-perpetuation and reproduction from new material, of the realities of which they are merely outward resemblances.

5th. That new life always rises from among the *debris*, or decaying material of the old.

The physical appearances of material found in the lungs of persons dying from so-called phthisis, was a question of force, and not of the forms and colors of materials. In the condition thus designated, there is conspicuous failure, or waste of structure, without corresponding repair from new material, from, as I understand it, failure of the necessary modes of force. At the velocity of waste in what is called acute phthisis, the structures cannot, and do not, store up the force for their own reproduction from new material, as they decay in the performance of function. In chronic, so called, phthisis, the functions of the lymphatics probably fail first, in not making the necessary separation of the material from the general debris, in which is stored up the force for the reproduction of the wasting tissues. And as the force is increased, lessened or varied, so will the forms, colors and appearances of material vary, found on post mortem examinations; and be without constancy; as this debate of the Pathological Society so clearly demonstrated.

Cui bono? of all this, asks a veteran therapeutist, who never thinks of, or wants to know, anything else than that this or that drug, or medicine, or compound, is good for this or that disease, or class of so-called diseases.

Just this, I reply—the good that all truth does. The function I have assigned to the lymphatic system has much positive and more negative evidence in its support, besides harmonizing with all the facts of organic nature. Its tendency will be to render us all increasingly exact in our professional services to the sick. We can hardly fail to be wiser, and better fitted for our duties, the more intimately we become acquainted with the inner workings of our wonderful bodies.

ARTICLE IV—*Transactions of the Chicago Society of Physicians and Surgeons. Meeting of November* 10, 1873. Reported by PLYM. S. HAYES, M.D., Chicago.

This Society was organized after the fire for the benefit of physicians resident in the southern portion of the city; but has since added to its number those practicing in both the North and West Divisions, and has increased to such an extent that it was considered desirable to hold its meetings in a more central location. For this reason the meeting was called in the Grand Pacific Hotel.

The Society was called to order at 8 o'clock P. M., by the Vice-President, in the absence of the President, Dr. A. Fisher. There were forty present, including the President, Secretary, and several members of the Chicago Medical Society, and some representatives of the Illinois State Microscopical Society.

The Chairman of the committee on a permanent place of meeting, reported on the subject in full. This report was accepted the committee discharged, and further consideration of the subject deferred to the next regular meeting.

Dr. John Bartlett then read a paper entitled, "*On a Marsh Plant from the Mississippi River Ague Bottoms; with a consideration of its genetic relation to Malarial Diseases.*"

Dr. Bartlett then described a marsh plant, the growth of which he discovered to be simultaneous with the appearance of malarial fevers, containing cells of exceeding minuteness, which possessed the power of rapid multiplication. These had been detected by Dr. Bartlett, in his own blood, and in that of several ague patients; and had been seen by him multiplying with great rapidity, and producing products similar to those recognized as peculiar features of the plant, in the blood, the urine and the saliva. On the conclusion of the reading, the members of the Society and invited guests inspected the microscopic preparations, colored drawings of the plant, and specimens of the plants themselves, growing in their native soil, which were intended to illustrate the reading.

The Society then adjourned, to meet again in the Grand Pacific Hotel, November 24, 1873.

Selections.

A Case of General Paresis. By J. B. Stonehouse, Jr., M.D., Assistant Physician Sanford Hall, Flushing, New York.

Certain diseases—which indeed properly belong to the domain of the specialist, but are in the earlier stages, when a proper appreciation of the symptoms is of the greatest importance, in the hands of the general practitioner—are seldom spoken of in the text-books or by the college instructors, while the medical journals only at wide intervals refer to them. One of these, general paresis, is peculiarly liable to a mistaken diagnosis, with the consequent damage to the patient's chances of recovery: especially is this the case when the paresis precedes the development of the *psychical* symptoms. A recent writer (Guy's Hospital Reports, 1870) argues that cases occur outside of the hospitals for the insane which deserve the title of general paresis as fully as those within. In accordance with this view, and with the hope of presenting to the readers of the *Practitioner* in a small space a general idea of the disease, with the views thereon of the recognized authorities, this article has been prepared. The case reported is one which was at no time in an asylum, and is therefore chosen for the text.

M. H., merchant, aged forty-three years, single, of good habits and of previous excellent health. The first symptoms observed by him, and for which he sought the advice of a physician, were a feeling of fullness of the head, with vertigo, an inability to perform any severe mental labor, and loss of memory. Two months later mental symptoms made their appearance. Patient declared he was not fitted for his business, and would ruin his partners. He said it had been decreed by Providence that he should fail if he continued in the business. After much deliberation he concluded to change his occupation, and selected the popular lecture-field for his future operations, expressing great faith in his oratorical powers, and displaying all that wonderful train of mental symptoms usual in the "*delire des grandeurs.*" Even while making these assertions a peculiar trembling of the lips, "as if about to burst into tears" (Maudsley,) often embarrassing his articulation very perceptibly, was noticed. This condition increased rapidly until he was unable to pronounce the *labials*. The right pupil was contracted;* paresis of the muscles of deglutition and expression soon took place; the use of the fingers, and later of the lower

* Hammond (Diseases of the Nervous System, page 369) quotes Austin (Pract. Acct. of General Paralysis, etc., London, 1859) as asserting that contraction of the right pupil is associated with melancholic delusions, and contraction of the left pupil with the more self-complacent fancies. This, however, cannot be supported.

extremities, became impaired. A failure of muscular power, with considerable spasmodic action after continued effort to grasp the instrument, was shown by the dynamometer. Muscles of the extremities responded to the electric stimulus. He was unable to dress himself without great effort. His gait at this time was very similar to that observed in cases of sclerosis of posterior columns of the spinal cord. A spasmodic action of the pulse (which varied from 90 to 100 per minute) was exhibited by the sphygmograph. Ophthalmic examination was made only during the first stages of the disease, without revealing any lesions of the optic nerve. No convulsions, comatose attacks, or maniacal exacerbations occurred during the course of the disease. From the end of the third month his mental powers steadily diminished into a condition of dementia. Urine and fæces passed involuntarily, and the patient would remain in contact with them until the sense of smell informed him of his condition. At this time there was anæsthesia of the greater portion of the cutaneous surface and of the mucous membranes, as far as could be noticed. This condition was not complete in the axillary and inguinal regions. Extreme loss of memory was observable. He seldom remembered an extravagant idea longer than the time occupied in uttering it. When asked his own name, in the later periods, he could not answer. During a brief absence of the nurse from the room death occurred from impaction of food in the fauces, owing to anæsthesia of these parts. From the appearance of the first symptoms to the day of death was five months and fifteen days.

Among the points of interest noticed in this case are the following:

1. The short duration of so typical a case. Hammond gives the average duration as three years.

2. The absence of any definite cause. The patient, as we have before stated, was a man of excellent habits. He was an active and consistent temperance man. An inquiry as to his past history revealed the fact that several years before the attack, during which time he enjoyed very good health, the patient had been severely mercurialized during a course of treatment for some liver trouble. Could this have produced a condition of the nervous system inviting the development of the disease?

Synonyms. General paresis, general paralysis of the insane, paresifying mental disease, paresis generalis, insania paresans, dementia paralytica, anoia paralytica, geisteskrankheit mit paralyse, paralysie generale, alienation ambitieuse avec paralysie incomplete, folie paralytique, delire des grandeurs.

As to the causation of general paralysis, no great certainty of opinion has been reached. Abuse of alcohol, the narcotics, etc., venereal excesses, and many other habits and conditions, have been charged with the production of this disease. Many cases occur,

however, which cannot be traced to this class of causes. The disease is comparatively rare among women. France gives a much larger proportion of cases than any other nation. Saloman ascribes to the female cases the depressed form of mental symptoms. In general paresis no order of symptoms is a typical one. The mental or physical symptoms may appear first, or they may be simultaneous. Parchappe reports that in eighty-six cases fifty-one were marked by the simultaneous appearance of the mental symptoms and paresis; in twenty-seven cases the paresis was subsequent, and in eight the precedence could not be determined. Leidesdorf relates the history of a case in which the earliest symptoms were spinal. On this point Maudsley says: "Before asserting in a particular case that there is no evidence of paralysis, it will be well to observe the patient when emotionally excited, or after a sleepless night; then there may be exhibited a tremulousness about his speech which is not at all visible when he is perfectly calm and collected." Forbes Winslow (Obscure Diseases of the Brain and Disorders of the Mind) says, speaking of the peculiar mental symptoms of the disease: "I have known the tendency to distort facts and look extravagantly at the bright side of everything through an intensely magnified and highly-colored, because morbid, medium to exist for five or even ten years before the mind presented any decided and recognized symptoms of alienation." M. Parchappe, in an address before the Medico-Psychological Society at Paris, 1858, says: "Mental disorder is constant from the first, at least under the form of impairment of the memory and judgment, and very frequently under that of maniacal or melancholic excitement."

The testimony of these quotations shows how difficult is not only the decision of the precedence of the symptoms, but also the diagnosis of the disease. The mental symptoms are ushered in by a stage of melancholia; but even this bears on the exaggeration of the *ego* — the patient is boastful of bodily ailments or persecutions. Gradually the ideas become more of the *ambitieux* type; an exaggeration of all that is favorable in the man or his life, and a new and falsely-colored representation of what is unworthy. With continued loss of memory we find a diminution in the coherence of ideas, until in the later stages there is observed merely the utterance of disconnected egotisms and optimisms. Finally, these psychical symptoms are not, according to some authorities, characteristic of the disease. M. Trelat (*Annales Medico-Psychologiques*, 1855) writes: "A great number of paralytics have no ideas of riches or greatness. There are some who, instead of being powerful, happy, and full of confidence, are timid, distrustful, and agitated by hypermaniacal ideas." M. Laseque (thesis on his examination for a fellowship, quoted by M. Arch Foville, Jr., *Quarterly Journal of Psychological Medicine*, New York, April, 1872,)

says, "the characteristic delirium may be wanting in spite of the intellectual disturbance." And again, M. Linas (quoted by the same authority) declares "he could not raise his voice too energetically against the opinion which assigns to general paralysis a definite delirium."

Among the first physical symptoms calling for medical treatment may be apoplectiform or epileptiform attacks and signs of cerebral congestion. The difficulties of articulation are usually among the earlier symptoms. Articulation becomes thick and labored, and loses distinctness and precision. Especial difficulty is experienced in the pronunciation of the labials. In the last stages "it consists only in the muttering of thick, indistinctly-articulated noises." Saloman (translated by Moore and quoted by Delaye) accounts for this condition by the "transient convulsive movements (involuntary spasms) of the muscles of the face, especially of the upper lip," and "fibrillar convulsions in the muscles of the tongue." The pathology of this condition is the implication of the anterior lobes in the degeneration, whether such changes be considered, with Parchappe, a cerebral softening (Medico-Psychological Society of Paris, 1858,) or Delaye, a molecular change of the cerebral tissue, especially of the gray substance (*De la paralysie generale incomplete, These de Paris*, 1822,) or Bayle, a meningitis (*Recherches sur les Maladies Mentales*, Paris, 1822,) or Behomme (quoted by Parchappe,) a meningo-cerebritis, or Calmeil, a chronic diffused peri-encephalo-meningitis (*De la paralysie consideree chez les Alienes*, Paris, 1822.)

It is of importance to remember that the condition of the limbs is not one of palsy, where the muscles refuse to respond to the mandate of the nervous centres; but, as the late Dr. Skae, of the Morningside Asylum of Scotland, states it (*Edinburgh Medical Journal*, April, 1860,) "the volition is irregularly conveyed and distributed. The person cannot control and direct his movements perfectly and consentaneously, just as a drunken man sees double because he cannot converge upon a given object, or walks unsteadily because he cannot direct and regulate the harmonious movements of his limbs." Dr. Reynolds, in his treatise on wasting palsy, states the means of diagnosis between general paresis and wasting palsy to be that in general paresis the muscles respond to the electrical stimulus, and in wasting palsy they do not. The functions of sight and hearing are not in ordinary cases involved except in the last stages. Smell and taste are much oftener affected, so that, according to Saloman, "the patient submits to their operation the most loathsome things." Hallucinations (endogenous sensations) are not unfrequently met with in sight and hearing. Hyperæsthesia and anæsthesia of the skin and mucous membranes are occasional but not essential symptoms of the disease. M. Parchappe noticed a slight increase of the

frequency of the pulse in general paresis, although the disease, except accidentally in the state of congestion, is not accompanied by a true febrile movement. In the last stage, a condition called by M. Parchappe "cerebral marasmus," in which occur pyæmia, pneumonia, colliquative diarrhœa, gangrenous destruction of tissue from effects of pressure, terminates the sad history. All these symptoms are subject to ameliorations, which to the inexperienced lend false hopes of recovery.

The prognosis is always *unfavorable*. Parchappe says: "I have not obtained a single positive and certain cure." Dr. G. Mackenzie Bacon (*Journal of Mental Science*, London, July, 1871,) declares: "Whatever the hopes of the therapeutics of the future, I can see no reason to wander through the pharmacopœia in search of a drug to cure a disease which depends essentially on structural changes, when we know that these, at least in the brain, are not remedied by medicines."

In the treatment of general paresis, tonics and stimulants are always of use, with sedatives or narcotics when necessary.

Parchappe, as a fair exponent of the French alienists, says of the pathology of the disease: "In the majority of cases the softening (which he considers the characteristic lesion) is found at the surface on the free margin of the convolutions. At a later period it often attacks the gray matter of the corpora striata, optic thalami, medulla spinalis, and cerebellum. Mental disorder, under the form of mania or melancholia, coincides with the superficial alteration of the cortical substance; the paresis and dementia are connected with the deeper alterations, the difficulty of speech with the lesion of the anterior lobes. A greater degree of softening is often found on one side, then the paresis is more determined on the other." In America the only investigations of importance have been begun at the New York State Asylum, by its special pathologist, Dr. E. R. Hun, of Albany, N. Y. In his last report he speaks of the autopsies in cases of general paresis: "Of the eight cases of general paresis six were men and two women, the oldest sixty-four and the youngest thirty-three years of age. In five cases there were eschars or ill-conditioned ulcers observed upon the surface of the body; the skull-cap was unusually thick in four cases; the membranes were adherent to each other in four cases; the arachnoid opaque in four and congested in one; a considerable amount of sub-arachnoid serous effusion was noticed in seven of the eight cases, and in two cases clots of blood were found upon the surface of the brain. In six of the eight cases there was more or less atrophy of the cerebral convolutions, and in one case embolism of the middle cerebral artery was accompanied by softening of the hemispheres. In this case two small cysts, filled with clear serous fluid, were found encroaching upon the brain substance. The weight of the encephalic mass (including

cerebrum, cerebellum, pons, and medulla) was taken in three cases; the heaviest weighed 48¼ ounces and the lightest 35¼ ounces, the average weight being 43⅓ ounces. In five of the cases there was existing tubercular disease, or evidences that such disease had formerly existed, as shown by cicatrices and cretaceous deposits in the lungs. In one case ossification of the mitral valve was found, and in three was marked deflection of the transverse colon toward the symphysis pubis."—*Am. Practitioner.*

Editors' Book Table.

[NOTE. — All works reviewed in the columns of the CHICAGO MEDICAL JOURNAL may be found in the extensive stock of W. B. KEEN, COOKE & Co., whose catalogue of Medical Books will be sent to any address upon request.]

BOOKS RECEIVED.

The Diseases of the Prostate, their Pathology and Treatment, comprising the Jacksonian Prize Essay for the Year 1860. By SIR HENRY THOMPSON, F.R.C.S., Surgeon Extraordinary to H. M. the King of the Belgians, etc., etc. Fourth Edition. Philadelphia: Henry C. Lea. 1873.

The republication in America of this, the fourth, edition of Sir Henry Thompson's valuable monograph, cannot fail to be welcomed by the practitioner solicitous for the cultivation of accurate diagnosis in this much neglected field of pathology. The literature of this department of practice may have been hitherto represented by a blank. This vacuum no longer exists, and the practitioner seeking instruction in examination and treatment of prostatic disease, at this day of such frequent occurrence, will find in this little work a mass of clinical data collated with judgment, of propositions rationally sustained, and of conclusions logically deduced. The pathological parallelism between prostatic and uterine disease, deduced from anatomical homologies, so singularly ignored by the vast majority of practitioners, is clearly and satisfactorily established. Embodied in the work are valuable intructions upon catheterism and upon vesical injections. The book is a condensed summary of the state of our knowledge of the disease down to the present day, derived not only from the

author's extended field of observation, but from the literature of the science. H.

Clinical Electro-Therapeutics, Medical and Surgical. A Hand Book for Physicians in the Treatment of Nervous and other Diseases. By ALLAN MCLANE HAMILTON, M.D., Physician in charge of the New York State Hospital for Diseases of the Nervous System, etc., etc. New York: D. Appleton & Co., 549 and 551 Broadway. 1873.

One of the most intelligible books upon the subject, in the language. The subject of electro-therapeutics may be said to have entered upon a new era in its history, the era of scientific investigation and logical analysis. After having for so many years constituted the stock in trade of itinerant charlatans, it seems now about to be rescued from their hands, and destined to prove the grand resource against so many of the *opprobria medicorum* which still cumber the catalogue of nervous diseases. Every effort to bring this powerful agent, electricity, within the reach of general practitioners, and reduce its operations to limits of laws, and to determine the principles of their action, deserves commendation. This appears to have been the aim of the author of this little treatise, and he has certainly attained more nearly the accomplishment of his object than any one who has preceded him.

Without attempting to exhaust his subject, or the patience of his readers, he has given us a practical manual, which can be made useful by any tyro acquainted merely with the rudiments of the science. H.

Hand Book of Physiology. By WILLIAM SENHOUSE KIRKES, M.D. Edited by W. MORRANT BAKER, F.R.C.S.E., etc.; with two hundred and forty illustrations. A New American, from the Eighth enlarged English Edition. Philadelphia: Henry C. Lea. 1873.

"*Vox Populi, Vox Dei,*" says the old proverb, and proverbs, if not all fact, are at least "founded on fact." When the demand for a book has been so great as to rapidly exhaust eight editions, criticism is superfluous. The profession at large has already recorded in the most practical form its favorable criticism upon the work, and it only remains for us to say to the small remainder of our readers who have not yet possessed themselves of the book, that

we most heartily endorse the public verdict, that it is the most useful handbook of physiology accessible to the American practitioner, and feel assured that when they have read it for themselves, they will thank us for calling their attention to it. H.

The Principles and Practice of Medical Jurisprudence. By ALFRED SWAYNE TAYLOR, M.D., F.R.S., Fellow of the Royal College of Physicians, Lecturer on Medical Jurisprudence in Guy's Hospital. Second Edition. 2 vols. Philadelphia: Henry C. Lea. 1873.

In the November number of the JOURNAL we took occasion to call the attention of the profession to the Manual of Medical Jurisprudence by the same author, and published by the same house, as the truly great work now before us. We have little to add in commendation of this, to what has been already said of the Manual, beyond putting our expressions relative to that in superlatives. The Manual contains enough and more than enough to supply the professional needs of the general practitioner; but the complete work now before us will prove to the expert a perfect mine of wealth, in which he may delve most laboriously without fear of exhausting its treasures. The publisher, in giving this work to the profession so soon after the publication of the Manual, has given practical expression to his confidence in the intellectual appreciation of American physicians and jurists, which they should not be slow to justify. The subject matter of this work seems to be brought down literally to the present day. H.

Treatise on the Diseases of the Eye, including the Anatomy of the Organ. By CARL STELLWAG, (von Carion), Professor of Ophthalmology in the Imperial Royal University of Vienna. Translated from the fourth German edition, by D. B. ST. JOHN ROOSA, M.D., Clinical Professor of Diseases of the Eye and Ear, in the University of the City of New York, etc., etc.; CHAS. S. BULL, M.D., formerly Assistant Surgeon to the Manhattan Eye and Ear Hospital, etc., etc.; CHAS. E. HACKLEY, M.D., Clinical Professor of Diseases of the Eye and Ear, etc., etc. Fourth Revised and Enlarged Edition. Illustrated by wood engravings and chromo-lithographs. New York: William Wood & Co. 1873.

The world-wide reputation of the author of this work, together with the merited claims to distinction in the specialty of which it

treats, enjoyed by its American editors, should earn for it the same welcome reception accorded to the first American edition. One must use much diligence indeed to find occasion for adverse criticism, notwithstanding the magnitude of the work, and the encyclopædic scope of its contents. The science of ophthalmology seems to be exhausted down to the present day to fill its pages; and the propositions advanced in the work, whether of diagnosis, pathology or therapeutics, appear to be well sustained by authorities, which are quoted, not generally, but specifically and distinctly. The work, as a whole, constitutes a most valuable addition to the library of American practitioners, few of whom are sufficiently versed in the subjects of which it treats, to enable them to dispense with the aid of an expert, even in cases involving some of the simplest forms of disease of the eyes. H.

A Practical Treatise on Diseases of the Ear, including the Anatomy of the Organ. By D. B. St. John Roosa, M.A., M.D., Professor of Diseases of the Eye and Ear in the University of the City of New York, etc., etc. Illustrated by wood engravings and chromo-lithographs. New York: William Wood & Company. 1873.

The author of the work before us may be truthfully called one of the pioneers of the science and art of otology in America, for it was through his translation of Von Troltsch on the Ear, published about ten years ago, that the attention of the profession in general may be said to have been first attracted to this important class of diseases. The plan of the work is very comprehensive, and the details admirably extended. Beginning with a sketch of the history of otology from the very earliest ages down to the present day, the author proceeds to an epitome of the bibliography of the science, and next, to an admirable dissertation on the anatomy of the external portion of the organ, which is illustrated by a series of the best wood cuts with which we have yet been favored. The instructions for the examination of patients are well drawn and clear, and are followed by descriptions of the diseases of this portion of the ear. The middle and internal ear are considered in their order in a similar manner, the whole concluding with some very instructive remarks on deaf-muteism and on the use of ear trumpets. The chromo-lithographic illustrations of the various forms of tympanic diseases are the best we have ever seen. There is scarcely a practitioner

who is not often consulted in regard to aural diseases about which he knows nothing whatever, his therapeutical range being limited to local applications to the meatus externus. The careful study of this work will enable him to treat successfully many of the simpler forms of aural diseases without the aid of the generally inaccessible expert or the omnipresent charlatan. H.

A Treatise on the Diseases of the Eye. By J. Soelberg Wells, F.R.C.S., Doctor of Medicine of the University of Edinburgh, etc., etc., etc. Second American, from the third English Edition, with additions; illustrated with two hundred and forty-eight engravings on wood, and six colored plates, etc., etc. Philadelphia: Henry C. Lea. 1873.

Coincidently with the appearance of the great work of Stellwag Von Carion, bearing the "imprimatur" of W. Wood & Co., of New York, appears this splendid addition to ophthalmological literature from the press of Henry C. Lea, of Philadelphia.

Had we to choose between the two, we fear that we should find ourselves in the predicament of the fabled ass between the bundles of hay, and should certainly take both. Had we seen but one, we should certainly have considered it the most valuable compendium of ophthalmology in the English language, but with both before us we say most heartily to our readers, buy both, read both, and you will have learned more of the diseases of the eye than you ever knew before. H.

Transactions of the American Medical Association. Vol. 24. 1873.

The present volume of the "Transactions" is about up to the average, possessing, however, some points of unusual interest, in the statistical tables of Medical Societies and of Hospitals in the United States, and in its Necrological Report. The "address" of the President has been so thoroughly criticized that we will not attempt it, satisfied that we could not do justice to the subject; it certainly has the merit of originality, the style being imitated from no classic model, either ancient or modern, with which we are acquainted. In fact, "none but itself could be its parallel."

The instructions to the publishing committee concerning the disclaimer of responsibility for the views and opinions expressed in the various papers comprising its Transactions, and published under its authority, were wise and prudent in the highest degree.

Would it not be well to appoint, at the next meeting, a committee to compile and publish, in cheap duodecimo, a detailed history of what the American Medical Association has accomplished for the profession or for science? H.

Editorial.

Historical Memoranda of this Journal.

The first number of this JOURNAL was issued in April, 1844, with Prof. Jas. V. Z. Blaney as editor, and entitled *The Illinois and Indiana Medical and Surgical Journal.* The first paragraph of Dr. Blaney's Introductory we reproduce:

"It is with pleasure, if not with pride, that we announce to the medical public the first number of the first Medical Journal that has been issued in the State of Illinois. Such an announcement may, perhaps, by some be thought premature. So indeed did it appear to us when our attention was first called to the subject. More mature reflection, however, convinced us that such an opinion was erroneous; and that it is so, must appear to all who will consider the condition of the medical profession of the West—their distance from the sources of improvement and from each other, and the necessity of disabusing public opinion of the impositions of empirics, for the spread of whose doctrines new countries afford peculiar facilities."

Those were the days when there were no railroads "out West," and the editor announced that his periodical "would be read in portions of the West almost inaccessible to the rest," and this proved true.

It started as a sixteen-page pamphlet, but of the same shape it has ever since retained. Among the prominent contributors to the first volume we notice Daniel Brainard, Wm. B. Herrick, John Evans, John McLean, Graham N. Fitch, Daniel Meeker, Austin Flint, J. H. Bird, with others whose names have since become widely known to the profession.

In 1846, the unfortunate idea of a "New Series" was first adopted, Drs. Brainard, Herrick and Evans becoming associated with Dr. Blaney as editors. The April number of 1846 was numbered Volume 1, New Series. The volume was issued in bi-monthly numbers of 96 pages each.

The same conduct and issue was continued until April, 1848, when Drs. Herrick and Evans took the editorial control alone, and the name was changed to the *Northwestern Medical and Surgical Journal.*

At the commencement of the next volume, for 1849 and 1850, Dr. Edwin G. Meek took the place of Dr. Herrick.

In May, 1851, Dr. Evans took the sole editorship.

May, 1852, Drs. W. B. Herrick and H. A. Johnson accepted the editorial tripod together.

In 1853, the volume, which had previously extended until May, was closed at December, and since that time the initial number has been issued in January.

The title page of our copy of the JOURNAL for 1854 is wanting, but in the text we find the name of Dr. N. S. Davis as editor, and from the frequent presence of the initial J. we think Dr. Johnson was still acting in the editorial capacity. This was clearly the case in 1855, numbered "Vol. IV, New Series;" so, also, in 1856, but in 1857 Dr. Johnson retired, leaving Dr. Davis sole editor.

In 1858, Dr. W. H. Byford became his associate, and the name was very properly changed to "Chicago Medical Journal," but, unfortunately, another "New Series" commenced with this as Volume I.

In 1859, Daniel Brainard again took the editorial pen, with Drs. W. Godfrey Dyas and Edwin Powell as associates.

In 1860, Drs. Dyas and Powell were replaced by Ephraim Ingals, and we find on the title page, "Vol. 3, New Series; Whole Series, Vol. 17."

In 1861, Dr. J. Adams Allen took the place of Dr. Ingals, and Dr. Brainard retained but a nominal connection.

In 1864, DeLaskie Miller, M.D., and Ephraim Ingals, M.D., assumed the control, continuing through that year and 1865.

In 1866, Drs. E. L. Holmes, R. M. Lackey and Henry M. Lyman, took joint and several possession of the quills, but did not murmur when, in 1867, the present senior editor (Dr. Allen) resumed his seat in the *sanctum*, "solitary and alone."

In 1868, the experiment of issuing in semi-monthly parts was inaugurated, and for a time promised well—indeed, that year and the first half of the next were seasons of the highest prosperity for the JOURNAL. Unhappily, a change of publishers brought "a

chilling frost." *De mortuis nil*, etc. But it is due to the living to say that the temporary publisher, having secured all the accounts and books of the JOURNAL, harassed those in arrears for subscriptions and advertisements, used the editor's name everywhere most unwarrantably, ran in debt for about all the printing that was done, delayed the publication most grossly, and, to make a long story short, after defaulting to the editor several thousands of dollars and endangering the very life of the JOURNAL, left the State and ultimately hung himself in St. Louis.

But after a short vacation the present publishers were engaged, and with the brief exception of the fire months, when our mail book and everything else was destroyed, everything has moved on with all the precision of machinery, and we do not hesitate to say that the handsomest medical journal the country affords has been presented to its readers. Of its contents it need only be said: Let the reader mark, learn and inwardly digest them, and he will be profited thereby.

In 1869 the senior editor associated with himself Walter Hay, M.D., whose work is everywhere to be seen on the pages of the JOURNAL, and who now adds largely to its value by assuming the laboring oar. A.

We take great pleasure in announcing to our readers, that the paper of Dr. Bartlett, upon the relations of certain microscopic spores found in the Mississippi bottoms, to malarial fevers, which is referred to in the proceedings of the Society of Physicians and Surgeons published in the current No., will constitute the leading article in the January No. of the JOURNAL for 1874.

The author of this paper has expended many months of patient labor and careful experiment upon the subject comprised in his treatise.

To those who know Dr. B., it is unnecessary for us to guarantee the honesty and fidelity of the work which he has accomplished. To those who do not, we feel sure that the narration of his experiments will carry with it the evidences of both. The paper will be inaccessible except to readers of the JOURNAL. H.

The Chicago Medical Examiner, of Nov. 15, contains a very apt editorial upon the subject of "Medical Books as Advertisements for

their Authors," which seems to bear internal evidences of having been written *at* a particular individual. Had we space to spare, we would take pleasure in copying it in full for the benefit of some of our older readers, who would appreciate it as it deserves. But pledged as we are to avoid personalities, we refrain. In his narration of the various forms which the "advertising dodge" assumes, the editor omits two which have come within our personal observation, *i. e.*, publishing the author's autobiography illustrated with portrait, of which we have seen nearly a quarter of a cord of unsold copies; the other is, trying to sell an unsaleable book after its condemnation by reviewers, at a reduced price. We hope the editor will continue to show up all such shams, and wish him most cordially "more point to his pencil." H.

With the current No., the JOURNAL closes the thirtieth year of its life. To us, one of the most satisfactory of all, and to our readers we believe not less so, if such conclusion may be legitimate from the substantial tokens of approval which they have tendered it. For that approval, together with the advancement of medical science, and the elevation of the standard of medical journalism, we have labored assiduously, conscious that to merit the former, we must, to some degree, accomplish the latter.

It is not alone in tokens of approval such as these that we find our greatest source of congratulation, but in the hearty spirit of co-operation with which our correspondents have lightened the editorial burthen, in contributing to the JOURNAL original articles rapidly increasing in number and value. For those accepted and published we return our thanks, and at the same time regret the necessity which has compelled us to decline others. We have now on file a number of valuable communications which will appear early in 1874, and are well worthy of careful study.

But with all these sources of congratulation and hope, we cannot, in laying down, for this year, the editorial pencil, now well-nigh worn to a stump, refrain from quoting one of the chrysostoms of English literature, knowing well that, "to innumerable readers this is a satisfying consummation; that innumerable readers consider us during these current months, but as an uneasy interruption to their ways of thought and digestion, not without a certain

irritancy and even spoken invective. For which, as for other mercies, ought he not to thank the Upper Powers? To one and all of you, O irritated readers, we, with open heart and outstretched arms, will wave a kind farewell.

> "Ring out the old, ring in the new,
> * * * * * *
> The year is going, let him go;
> Ring out the false, ring in the true!"

H.

"Brown-Sequard's and Seguin's Journal,

'*The Archives of Scientific and Practical Medicine*,' ceases with the Nov. (the sixth) number. Too much nerve force and too high temperature for this climate."—*Clinic*, *Nov.* 1.

"'Tis true, 'tis pity, and pity 'tis, 'tis true." As somebody said about facts, so much the worse for the climate. It furnishes a sad commentary upon the educational necessities of the profession, who write to medical editors, who venture to furnish only occasionally a scientific article, for "something lighter," and who utterly refuse to support one who makes his journal the medium of scientific culture alone.

We hailed the first No. of the *Archives of Scientific and Practical Medicine* with joy, as supplying a great void in American medical literature. We forwarded the subscription price at once with pleasure, and have read every number with gratification. We cannot complain of having lost any "nerve force" in its perusal, and have rather luxuriated in what the *Clinic* calls the "high temperature," as supplying a delightful change from the "heavy wet" of many of our cotemporaries.

At the funeral of the "*Archives*," we wish to be counted in as "mourners," and yet while we mourn, it is not without hope, and we sincerely pray *ut resurget*. H.

Publishers' Notice.

In forwarding the present No. of the JOURNAL to our subscribers of the year 1873, we desire that the expression of our gratitude for their kind patronage should accompany it. At the beginning of the current year, we congratulated ourselves upon the pleasant auspices under which the new year was commenced, and the

assurances which we felt enabled to make to our readers that the JOURNAL should be more than ever worthy of their patronage.

That the first have been realized we are assured by our cash balance. The fulfillment of the latter is confirmed by our rapidly increasing subscription list.

The condition and prospects of the JOURNAL have never been so prosperous and flattering as now, and we feel justified in renewing our promises of the past year with even greater assurance of our ability to fulfill them.

The JOURNAL has been brought to its present prosperous condition only by maintaining inflexibly our rule to furnish it to advance subscribers alone. We are thus enabled to return to them the full value of their subscription, without the necessity of "watering the stock."

The January No., therefore, will be sent only to those who remit the subscription price in advance.

A Bill to Promote the Science of Medicine and Surgery in the State of Illinois.

SECTION 1. It shall be lawful in cities and counties whose population exceeds twenty thousand inhabitants, for superintendents of penitentiaries, wardens of poorhouses, coroners and city undertakers, to deliver to the professors and teachers in medical colleges and schools in this State, and for professors and teachers to receive, the remains or body of any deceased person, for purposes of medical and surgical study: *provided*, that said remains shall not have been regularly interred, and shall not have been desired for interment by any relative or friend of said deceased, within twenty-four hours after death: *provided, also*, that the remains of no person who may be known to have relatives or friends shall be so delivered or received without the consent of said relatives or friends: *and provided*, that the remains of no one detained for debt, or as a witness, or on suspicion of crime, or of any traveler, or of any person who shall have expressed a desire in his or her last sickness that his or her body may be interred, shall be delivered or received as aforesaid, but shall be buried in the usual manner: *and provided, also*, that in case the remains of any person so delivered or received shall be subsequently claimed by any surviving relative or friend, they shall be given up to said relative or friend for interment.

SEC. 2. And it shall be the duty of the said professors and teachers decently to bury in some public cemetery, the remains of all bodies after they shall have answered the purposes of study as aforesaid; and for any neglect or violation of the provisions of this act, the party so neglecting shall forfeit and pay a penalty of not less than twenty-five nor more than fifty dollars, to be sued for by the health officers of said cities, or other places, for the benefit of their department.

SEC. 3. The remains or bodies of said persons as may be so received by the professors and teachers, as aforesaid, shall be used for the purposes of medical and surgical study alone, and in this State only; and whoever shall use such remains for any other purpose, or shall remove such remains beyond the limits

of this State, or in any manner traffic in the same, shall be deemed guilty of a misdemeanor, and shall, on conviction, be imprisoned for a term not exceeding one year in a county jail.

SEC. 4. Every person who shall deliver up the remains of any deceased person in violation of, or contrary to, any or all of the provisions contained in the first section of this act, and every person who shall receive said remains, knowing the same to have been delivered contrary to any of the provisions of said section, shall each and every of them be deemed guilty of a misdemeanor, and shall, on conviction, be imprisoned for a term not exceeding two years in a county jail.

The above bill passed the lower house of the Illinois Legislature at its last session, and was introduced into the Senate, where those having it in charge found its defeat inevitable, owing to the absence of a number of Senators favoring the bill. It was, on motion, re-referred to the committee, and so stands for action by the adjourned session of the Legislature, which meets in January next. It passed the House by the flattering majority of 102 to 31, which gave confidence to its friends that the dark days for Anatomy had passed. The object of this communication is to appeal to every Alumnus of Rush Medical College, as well as every member of our profession in this State, to make a personal effort to secure its passage. It can be done by a united effort, brought to bear on every Senator in the State. Make this a personal matter, and *attend to it at once*. Not only use your own influence, but bring every other person's you can to bear on it, in its favor. Obtain a pledge to vote for it; or, if you cannot do that, after exhausting your best efforts, at least get them to promise *not to vote against it.*

The arguments for it need not be suggested to you, especially those who have risked their lives and liberty obtaining knowledge it were a crime against man and the State to be without. The bill is as unobjectionable as it is possible to make one of its kind, and I think, by a concentrated and determined effort made on our law-givers, we will succeed in obtaining this indispensable part of successful medical teaching, as well as rid our statute books of one of the disgraces of civilization. "Boys, help us."

R. L. REA.

Reports of Societies.

Woodford Co. Medical Association.

This Association held its fall session in Edmund Burke Hall, Eureka, on Tuesday, October 21st, and was called to order at 2 o'clock by Dr. D. W. Lamme, President.

After the usual routine of business, Dr. J. S. Whitmire, from the Committee on Medical Education, made a report.

CLINICAL EXAMINATIONS.

A large number of patients from different parts of the county had gathered, to be examined and prescribed for. This has proved to be a very interesting and profitable diversion in the exercises of the Association. Dr. J. S. Whitmire was appointed Master of Clinics, and Dr. G. F. Roberts, of Lacon, Assistant. Among the cases presented was a boy, some twelve years old, with extrophy of the bladder.

The Board of Censors presented the names of Drs. Robert G. Allen, G. Newkirk, and D. Slemmens, and on motion they were duly elected members.

Dr. J. S. Whitmire read a paper on "Criminal Abortion." And on motion the doctor was requested to have the same published in the CHICAGO MEDICAL JOURNAL.

The President, Dr. Lamme, read from his clinical notes, a detailed description of two cases of obstruction of the bowels, occurring in his practice.

Clinical reports were also made by Drs. N. B. Crawford, J. S. Whitmire, A. H. Kinnear, and G. Newkirk.

Prof. B. J. Radford, of Eureka College, was unanimously made an honorary member of the Association.

By invitation the Association voted to meet the Marshall County Medical Society in joint session, at Wenona, on the first Tuesday in January.

Prof. B. J. Radford delivered a popular lecture in the evening to a large audience, composed of the Professors, students of the college, and citizens in general, in addition to the members of the Association. Subject, "Life and its Preservation."

This Association was organized in October, 1870; and though quite small in numbers in the beginning, it has steadily grown, till now it numbers over thirty active members. Real evidence of a primary medical education from a reputable school, and a good moral and professional standing, *must* be given.

FREDERICK COLE, M.D., *Secretary.*

El Paso, Ill., October, 1873.

Obituary.

Wells Ransom Marsh, A.M., M.D., died October 15th, 1873, at Crystal Springs, Yates county, New York, of *Pneumonia Gangrænosa.*

Dr. Marsh was born in Townshend, Vermont, A. D. 1826. The family migrated to Kalamazoo, Michigan, in 1833, being among the pioneers of that section of the State. Developing a strong taste for study, the subject of our sketch entered the University at Ann Arbor, and graduated with honor in 1848. He subsequently received the degree of A.M. from the same institution. He attended medical lectures at the Indiana Medical College, and then located at Laporte, having the diploma of M.D. granted him at the last session of the college in that place.

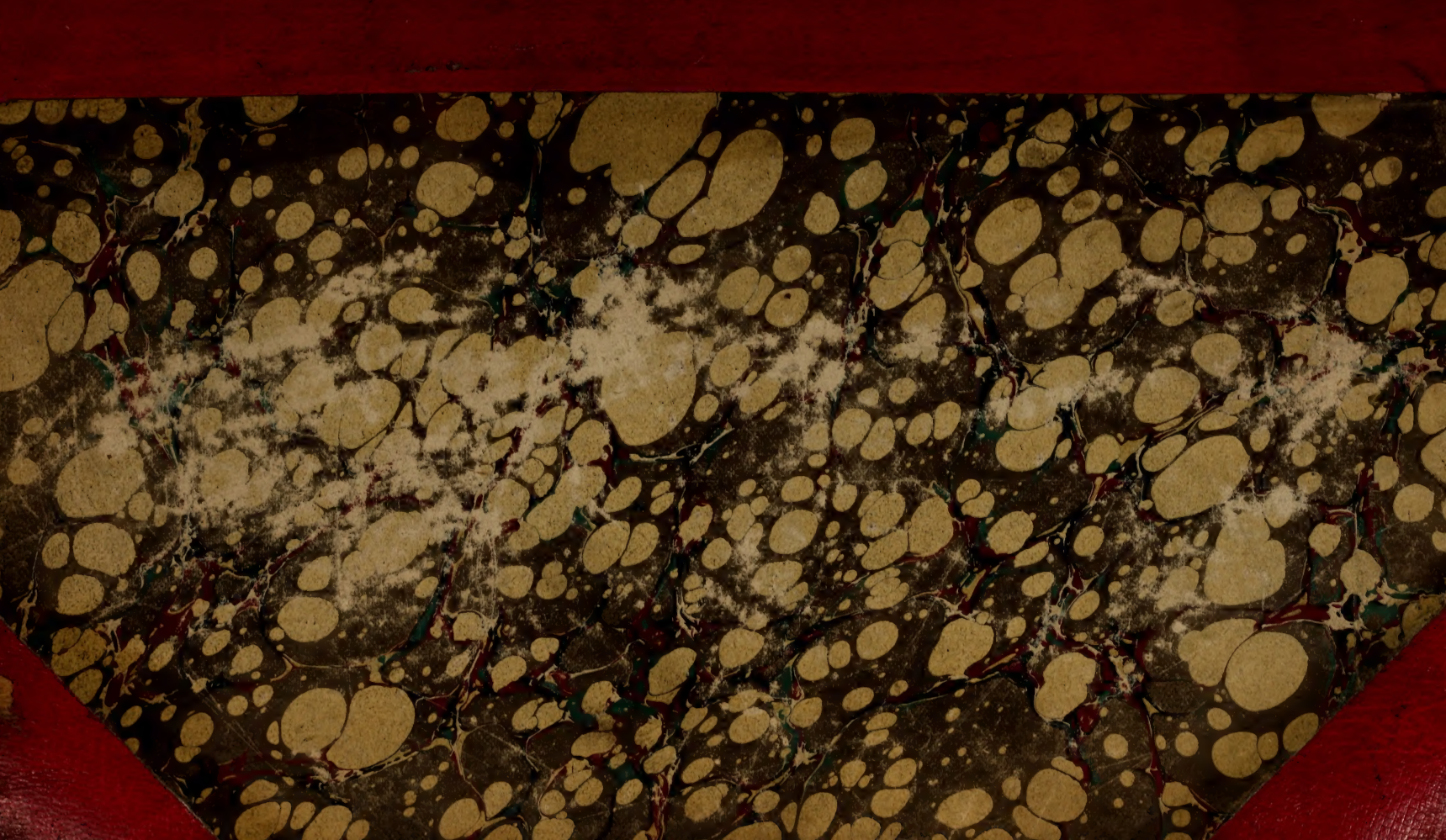
After practicing his profession for several years in Kalamazoo, he was solicited, in connection with his brother, Charles P. Marsh, M.D., to take professional charge of the large colony of Hollanders who, under the care of the Rev. A. C. Van Raalte, located at Holland and its vicinity, on the eastern shore of Lake Michigan. Probably no severer, more arduous or harassing toil ever fell to the lot of two physicians, than this position imposed on the brothers Marsh. The sole medical, surgical and obstetrical charge of some six thousand persons, suddenly collected in what was then an unbroken forest, devolved upon them. With what untiring assiduity, sleepless care and conscientious zeal the brothers discharged their duty there, none but those personally cognizant of the facts can appreciate. The feeble colony has become a prosperous and wealthy community, as it always was an industrious and intelligent one, and no hearts and memories will be filled with sincerer grateful recollections, and more lasting reminiscences of respect and love, than theirs at the mention of the names of the Drs. Marsh.

In 1856, the subject of this notice received the appointment of Professor of Chemistry and Materia Medica in the Medical College at Keokuk, Iowa, a chair which he filled until the beginning of the late war, when he entered the service as Surgeon of the 2d Iowa Volunteers, under the first three months call, being thus the second in point of seniority of the volunteer surgeons of that State, and at the time of being mustered out in 1865, he ranked as oldest in commission of the volunteer surgeons of the West. During the entire war, except when temporarily disabled by sickness, he was in the most active service, being present at nearly all the principal skirmishes, great battles,

and severest marches and expeditions from Belmont and Fort Donaldson to Atlanta and Savannah, then through the Carolinas, to Richmond, Washington, and "home again."

Enfeebled in health and broken in constitution, by the continuous hardships to which his campaign life had subjected him, "when the cruel war was over" he settled for practice in Chicago, where he rapidly gained friends and the respect of his professional acquaintances. But the worn and disabled physical part refused to rally, and some two years since he went East, if possible, to recuperate. Whilst there he accepted the sanitary charge of the Crystal Springs establishment, and not only won the hearts of his immediate patients, but was fast gaining the confidence of the physicians in the country about, by whom he was frequently consulted. Here he was suddenly struck down by the disease which his shattered constitution, although for a long period it had been most cautiously cared for, could not resist.

In person Dr. Marsh was of commanding figure, about six feet and an inch in height, well and symmetrically proportioned, straight as an arrow, black hair and keen black eyes. Fluent in conversation, quick to discern and ready in response, he was always the life of the circle where he was present. As a practitioner he was far above the average—an excellent diagnostician, usually a very cautious, but on occasion a bold therapeutist or operator. As a lecturer he was characterized by his thorough command of the subject, his obviously earnest desire that the student should understand his teachings, and by his cultivated, scholarly style of discourse.

Dr. Marsh acted for some time as editor of the Keokuk (Iowa) *Medical Journal*, and has contributed valuable papers to other periodicals. A report from his pen on the cholera in Chicago, in 1866, was read at the annual meeting of the Illinois State Medical Society at Springfield, in 1867, and will be remembered as an important contribution to the literature of the subject.

He leaves, besides a large circle of relatives and friends, a wife and four children to mourn his loss.